

LEVEE CONVENTION NUMBER—PART I.

# MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL  
RAILROAD AND FINANCIAL NEWSPAPER.

## In This Issue:

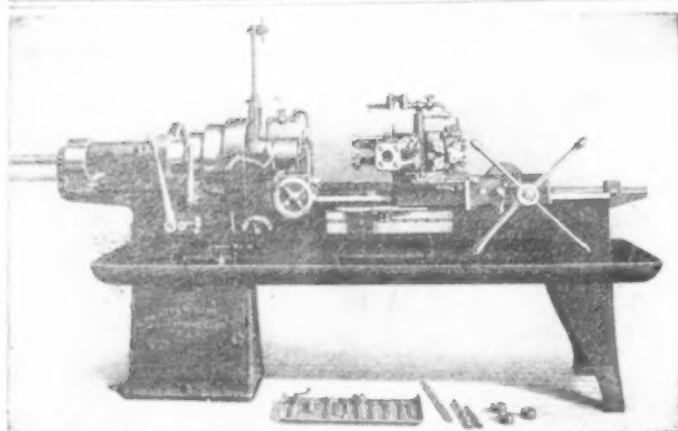
Full Official Report of  
the Convention of the  
Interstate Mississippi  
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and Levee Association.

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VOL. XLIV.  
No. 19.

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Baltimore, November 26, 1903.



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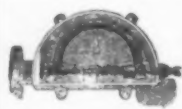
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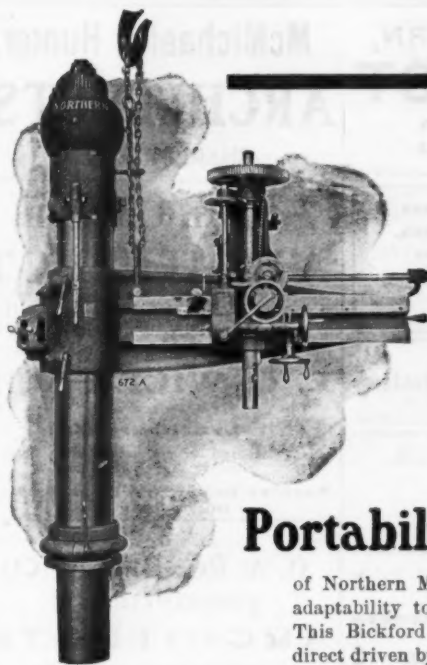
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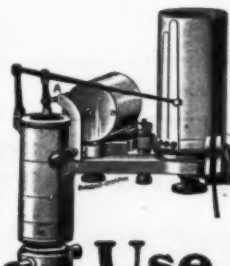
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**Crushing and Pulverizing Machinery.**  
Austin Mfg. Co., Chicago, Ill.  
Bartlett, C. O., & Snow Co., Cleveland, O.  
Bradley Pulverizer Co., Boston, Mass.  
Crescent Co., Geo. V., New York, N. Y.  
Kent Mill Co., New York, N. Y.  
McLanahan-Stone Machine Co., Hollidaysburg, Pa.  
Raymond Bros. Impact Pulv. Co., Chicago, Ill.  
Simpson, J. S., & Co., F., Brooklyn, N. Y.  
Smith, F. L., & Co., New York, N. Y.  
Sturtevant Mill Co., Boston, Mass.  
Walker & Elliott, Wilmington, Del.  
**Crushers.** (Corn and Cob.)  
Brown Co., A. & F., New York, N. Y.  
Foss Mfg. Co., The Grange, O.  
Munson Bros. Co., Utica, N. Y.  
Wolf Co., The Chambersburg, Pa.  
**Crusher Rings.**  
Latrobe Steel Co., Philadelphia, Pa.  
**Cupola Furnaces.**  
Obermayer, S. Co., Cincinnati, O.  
Petroleum Iron Works Co., Washington, Pa.  
Pollock, Wm. B., Co., Youngstown, O.  
**Cutterheads.** (Woodworking.)  
Moshannon Mfg. Co., Philadelphia, Pa.  
Shimer, Samuel J., & Sons, Milton, Pa.  
Smith, H. B., Machine Co., Smithville, N. J.  
**Drum Mills.**  
Huber Bros., Rochester, N. Y.  
**Designers and Illustrators.**  
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Baltimore-Maryland Engraving Co., Baltimore, Md.  
**Decks.**  
Cushing Co., The, Baltimore, Md.  
Dearborn Deck Co., Birmingham, Ala.  
Himmel, M. L., & Son, Baltimore, Md.  
**Dies for Sheet-Metal Workers.**  
Lester, Chas., & Co., Brooklyn, N. Y.  
Niagara Machine & Tool Works, Buffalo, N. Y.  
**Dipper Teeth, Lips, etc.**  
Taylor Iron & Steel Co., High Bridge, N. J.  
**Doors.** (Steel Rolling.)  
Kinross Mfg. Co., Columbus, O.  
**Dredges and Excavators.**  
Hardie-Tynes Mfg. Co., Birmingham, Ala.  
Hayward Co., New York, N. Y.  
Miles Co., Cincinnati, O.  
Marion Steam Shovel Co., Marion, O.  
The Automatic Shovel Co., Lorain, O.  
**Drills.** (Pneumatic.) (See Drills, Rock & Mining.)  
**Drills.** (Prospecting.)  
Sullivan Machine Co., Chicago, Ill.  
**Drills.** (Rock and Mining.)  
Ingersoll-Sergeant Drill Co., New York, N. Y.  
McKernan Drill Co., New York, N. Y.  
Rand Drill Co., New York, N. Y.  
Sullivan Machinery Co., Chicago, Ill.  
**Drills.** (Twist.)  
Barnes Co., W. F. & John, Rockford, Ill.  
Morse Twist Drill & Machine Co., New Bedford, Mass.  
**Drill Presses.**  
Baker-Lobby Co., Charleston, S. C.  
Barnes Co., W. F. & John, Rockford, Ill.  
Barr, H. B., Worcester, Mass.  
Sickford Drill & Tool Co., The, Cincinnati, O.  
Price, S. M., Machinery Co., Norfolk, Va.  
Walke, Henry Co., Norfolk, Va.  
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Baltimore Shipbuilding & Dry Dock Co., Balto., Md.  
Newport News Shipbldg. & D. Co., Newport, News, Va.  
**Drying Machinery.**  
American Blower Co., Detroit, Mich.  
Andrews & Johnson Co., Chicago, Ill.  
Baker-Lobby Co., The, Charleston, S. C.  
Bartlett, C. O., & Snow Co., Cleveland, O.  
Jeffrey Mfg. Co., The, Columbus, O.  
Suggs-Coles Engineering Co., New York, N. Y.  
Sturtevant Co., B. F., Boston, Mass.  
**Dry-Kilns.**  
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Sturtevant Co., B. F., Boston, Mass.  
Union Iron Works Co., Selma, Ala.  
**Dumbwaiters.**  
Spindel, J. G., Reading, Pa.  
**Dust-Collecting System.**  
Allington & Curtis Mfg. Co., Saginaw, R. R. Mich.  
Cincinnati Exhaust & Blow Pipe Co., Cincinnati, O.  
Dixie Mfg. Co., Baltimore, Md.  
Hartford Blower Co., Hartford, Conn.  
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Fairmount Machine Co., Philadelphia, Pa.  
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Commercial Electric Co., Indianapolis, Ind.  
Crocker-Wheeler Co., Amper, N. J.  
Ewing-Merkle Electric Co., St. Louis, Mo.  
Florida Electric Co., Jacksonville, Fla.  
General Electric Co., Schenectady, N. Y.  
Guarantee Electric Co., Chicago, Ill.  
Johnson, Chas. F., Buffalo, N. Y.  
Kentucky Electric Co., Owensboro, Ky.  
Northern Electric Mfg. Co., Madison, Wis.  
Piedmont Electric Co., Asheville, N. C.  
Ridgway Dynamo & Engine Co., Ridgway, Pa.  
Standard Electric Co., Norfolk, Va.  
Triumph Electric Co., Cincinnati, O.  
Wesco Supply Co., St. Louis, Mo.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.  
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Georgia School of Technology, Atlanta, Ga.  
**Electors.**  
Ohio Injector Co., Wadsworth, O.  
**Electric Contractors.**  
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Barr & Elam, Greensboro, N. C.  
Electrical Material Co., Baltimore, Md.  
Electric Supply Co., Savannah, Ga.  
Ewing-Merkle Electric Co., St. Louis, Mo.  
MacAfee, John Blair, Philadelphia, Pa.  
McWilliams, Jos., & Co., Louisville, Ky.  
Northern Elec. Mfg. Co., Madison, Wis.  
Scott, James B., Baltimore, Md.  
Standard Electric Co., Norfolk, Va.  
Tompkins, D. A., Co., Charlotte, N. C.  
Upton, W. B., Co., Washington, D. C.  
Wesco Supply Co., St. Louis, Mo.  
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Electrical Material Co., Baltimore, Md.  
Ewing-Merkle Electric Co., St. Louis, Mo.  
Northern Electric Mfg. Co., Madison, Wis.  
Piedmont Electric Co., Asheville, N. C.  
Standard Electric Co., Norfolk, Va.  
Wesco Supply Co., St. Louis, Mo.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.  
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Commercial Electric Co., Indianapolis, Ind.  
Crocker-Wheeler Co., Amper, N. J.  
Electrical Material Co., Baltimore, Md.  
Electric Supply Co., Savannah, Ga.  
Ewing-Merkle Electric Co., St. Louis, Mo.  
General Electric Co., Schenectady, N. Y.  
N. J. Foundry & Machine Co., New York, N. Y.  
Northern Electric Mfg. Co., Madison, Wis.  
Piedmont Electric Co., Asheville, N. C.  
Ridgway Dynamo & Engine Co., Ridgway, Pa.  
Standard Electric Co., Norfolk, Va.  
Tompkins, D. A., Co., Charlotte, N. C.  
Triumph Electric Co., Cincinnati, O.  
Upton, W. B., Co., Washington, D. C.  
Wesco Supply Co., St. Louis, Mo.  
Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.  
**Electric Power.**  
Weaver, W. T., Power Co., Asheville, N. C.  
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Electrical Material Co., Baltimore, Md.  
Ewing-Merkle Electric Co., St. Louis, Mo.  
General Electric Co., Schenectady, N. Y.  
Northern Electric Mfg. Co., Madison, Wis.  
Standard Electric Co., Norfolk, Va.  
Triumph Electric Co., Cincinnati, O.

Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.  
Wesco Supply Co., St. Louis, Mo.  
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Barr & Elam, Greensboro, N. C.  
Electrical Material Co., Baltimore, Md.  
Electric Supply Co., Savannah, Ga.  
Ewing-Merkle Electric Co., St. Louis, Mo.  
Guarantee Electric Co., Owensboro, Ky.  
Kentucky Electric Co., Owensboro, Ky.  
Maine Electric Co., Portland, Me.  
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Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.  
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Florida Electric Co., Jacksonville, Fla.  
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Kinkade & Liggett, Columbus, O.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Louisville Elevator Co., Louisville, Ky.  
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Williams & Co., Baltimore, Md.  
Otis Elevator Co., New York, N. Y.  
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Park Mfg. Co., Charlotte, N. C.  
Plunger Elevator Co., Worcester, Mass.  
Reedy, J. W., Elevator Mfg. Co., Chicago, Ill.  
Dufur & Co., Baltimore, Md.  
Westbrooks, J. B., Fdry. & Mch. Co., Danville, Va.  
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Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Taylor Iron & Steel Co., High Bridge, N. J.  
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Buffalo Wire Works Co., Buffalo, N. Y.  
Dufur & Co., Baltimore, Md.  
Ludlow-Saylor Wire Co., The, St. Louis, Mo.  
Meyers Mfg. Co., The Fred J. Hamilton Co.  
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Carborundum Co., The, Niagara Falls, N. Y.  
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Force, John P., Columbus, Ohio.  
Gilbreth, Frank B., Boston, Mass.  
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Kennedy, Walter, Pittsburgh, Pa.  
Ludwig & Co., Atlanta, Ga.  
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McWilliams, Jos., & Co., Louisville, Ky.  
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Robinson Contracting Co., Mobile, Ala.  
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Scott, Jas. B., Baltimore, Md.  
Sheffield, O. H., & Co., Atlanta, Ga.  
Smith & Co., F. L., New York, N. Y.  
Standard Electric Co., Norfolk, Va.  
Tompkins, D. A., Co., Charlotte, N. C.  
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Upton, W. B., Co., Washington, D. C.  
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Atlas Engine Works, Indianapolis, Ind.  
Ball Engine Co., The, Erie, Pa.  
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Baltimore Engine Co., Baltimore, Md.  
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Mecklenburg Iron Works, Charlotte, N. C.  
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Phoenix Iron Works Co., Meadville, Pa.  
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Savannah Locomotive & Car Works, Savannah, Ga.  
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Southark Foundry & Machine Co., Philadelphia, Pa.  
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Strait, H. N., Mfg. Co., Kansas City, Kan.  
Sturtevant Co., B. F., Boston, Mass.  
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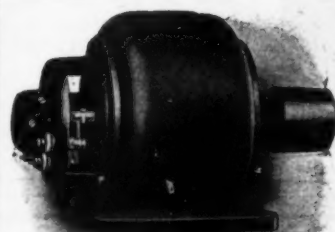
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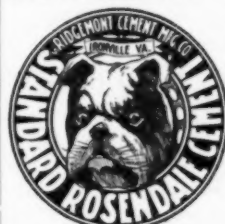
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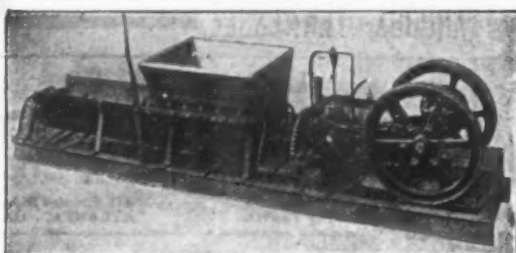
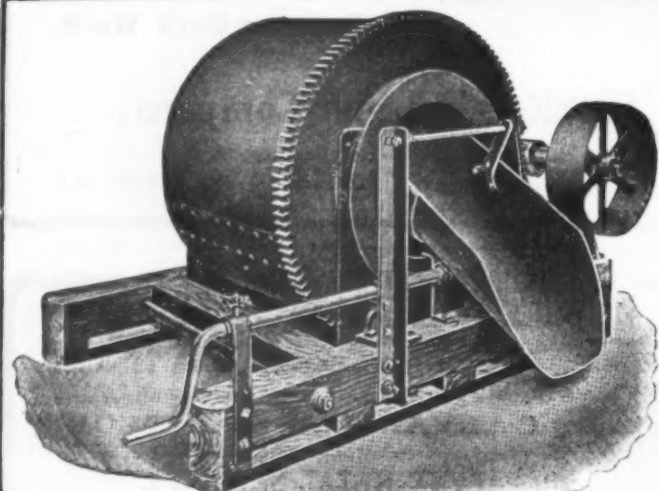
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# Classified Index of Articles Advertised

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 Vilter Mfg. Co., Milwaukee, Wis.  
 Vogt, Henry, Machine Co., Louisville, Ky.  
 Walke, Henry, Co., Norfolk, Va.  
 Westinghouse, Church, Kerr & Co., Pittsburg, Pa.  
 Westinghouse Machine Co., Pittsburg, Pa.  
**Engines.** (Gas, Gasoline and Kerosene.)  
 Blakeley Mfg. Co., The Birmingham, Ala.  
 Brown-Cochran Co., Lorain, O.  
 Columbus Machine Co., Columbus, O.  
 Gibbs, W. H., & Co., Columbia, S. C.  
 Otto Gas Engine Works, Philadelphia, Pa.  
 Pennsylvania Iron Works, Philadelphia, Pa.  
 Price, S. M., Machinery Co., Norfolk, Va.  
 Westinghouse, Church, Kerr & Co., Pittsburg, Pa.  
 Westinghouse Machine Co., Pittsburg, Pa.  
**Engines.** (Hydraulic Pumping.)  
 Niagara Hydraulic Engine Co., Chester, Pa.  
**Engravers.**  
 Alpha Photo-Engraving Co., Baltimore, Md.  
 Baltimore-Maryland Engraving Co., Baltimore, Md.  
 Middleton, J. W., & Co., Chicago, Ill.  
**Excelsior Machines.**  
 American Excelsior & Machine Co., Baltimore, Md.  
 Gibbs, W. H., & Co., Columbia, S. C.  
**Exhaust Heads.**  
 Burt Mfg. Co., Akron, O.  
**Expansion Belts.**  
 N. J. Foundry & Machine Co., New York, N. Y.  
**Fans.** (Electric.)  
 Electrical Material Co., Baltimore, Md.  
 General Electric Co., Schenectady, N. Y.  
 Westinghouse Electric & Mfg. Co., Pittsburg, Pa.  
**Fans.** (Ventilating.) (See Blowers, Exhaust Fans.)  
**Feed-Water Heaters and Purifiers.**  
 Bates Machine Co., Joliet, Ill.  
 Gibbs, W. H., & Co., Columbia, S. C.  
 Green Fuel Economiser Co., Mattawan, N. Y.  
 Greenwald Co., I. & E., Cincinnati, O.  
 Kelley, Benj. F., & Son, New York, N. Y.  
 McAdeco Thomas, Philadelphia, Pa.  
 National Pipe Bending Co., New Haven, Conn.  
 Petroleum Iron Works Co., Washington, Pa.  
 Scales, Wm. B., & Sons, Co., Pittsburg, Pa.  
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 Webster & Co., Warren, Camden, N. J.  
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 Buffalo Wire Works Co., Buffalo, N. Y.  
 Dufur & Co., Baltimore, Md.  
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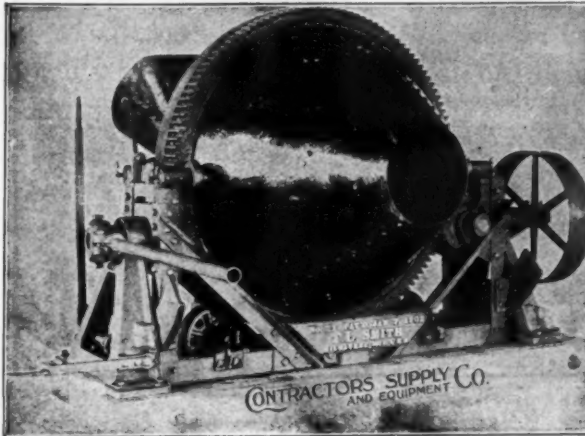
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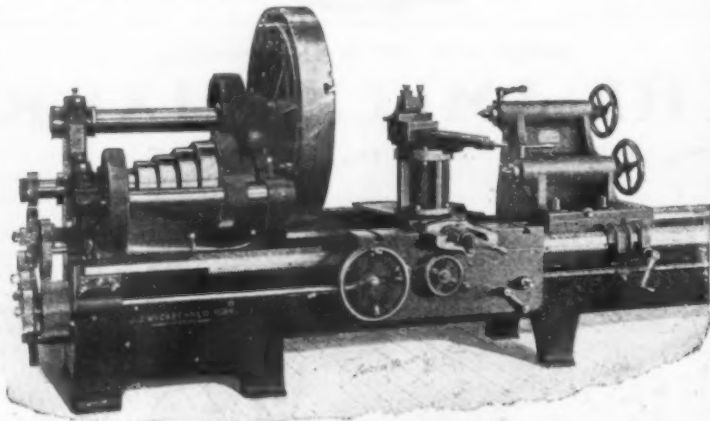
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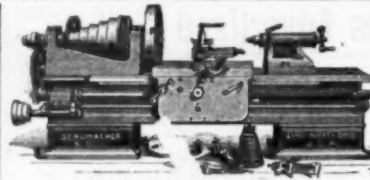
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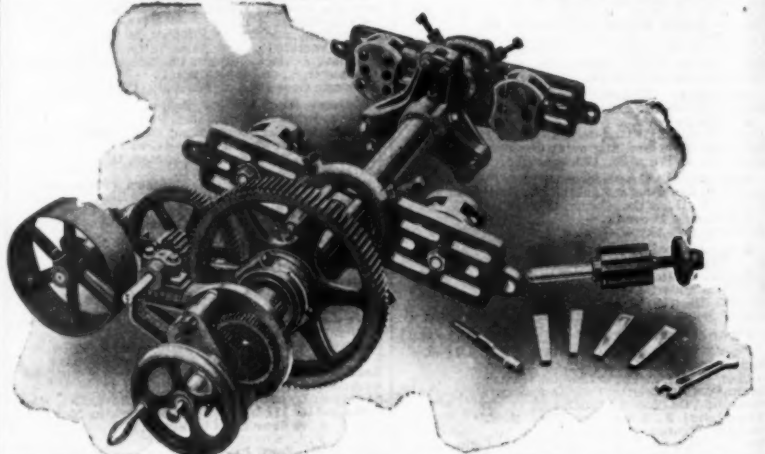
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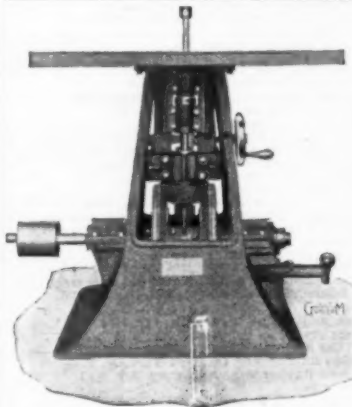
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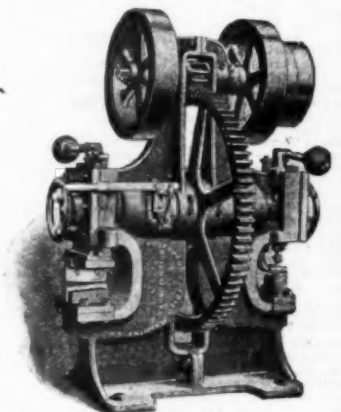


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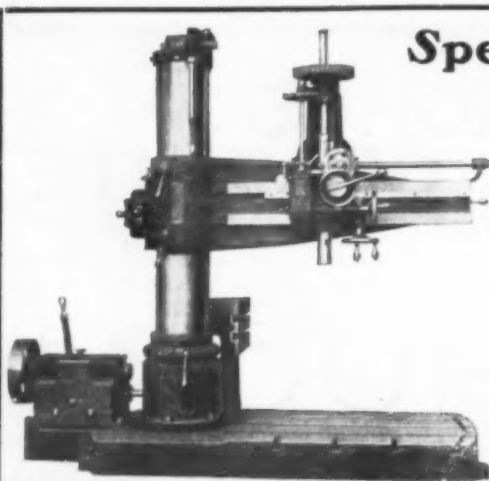
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Stetson Lumber Co., Macon, Ga.

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Pennsylvania Iron Works, Philadelphia, Pa.

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American, Chicago, Ill.

American Elec. Supply &amp; Mfg. Co., New York, N. Y.

Anthraxite Mch. &amp; Supply Co., Allentown, Pa.

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Booth &amp; Fling, Ltd., Pittsburgh, Pa.

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Brown &amp; Zortman Machinery Co., Pittsburg, Pa.

Caine &amp; Pitt, Philadelphia, Pa.

Casey, D. L., Mch. Co., Springfield, O.

Chicago House Wrecking Co., Chicago, Ill.

Cincinnati Equipment Co., Cincinnati, O.

Cleveland Baiting &amp; Machinery Co., Cleveland, O.

Clyde Mch. Works, Chicago, Ill.

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Columbus Iron &amp; Steel Co., Columbus, O.

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Contractors' Supply Co., Pittsburg, Pa.

Contractors' Supply &amp; Equipment Co., Chicago, Ill.

Cox, Justice, Jr., &amp; Co., Ltd., Philadelphia, Pa.

Driscoll, John T., &amp; Co., Chicago, Ill.

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Garvin Machine Co., New York, N. Y.

Hanna &amp; Kalmuch, New Orleans, La.

Hartfelder-Garbutt Co., Savannah, Ga.

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Hilmer, H. A., Sons, Philadelphia, Pa.

Huntington Machinery &amp; Supply Co., Wilkesbarre, Pa.

Kaiser, A. V. &amp; Co., Philadelphia, Pa.

Kennedy, L. E. &amp; Co., New York, N. Y.

Lehman, Charles T., Birmingham, Ala.

Lodge &amp; Shipley Mch. Tool Co., Cincinnati, Ohio.

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Matapaco Machine &amp; Supply Co., Baltimore, Md.

Poulter &amp; Co., Philadelphia, Pa.

Price Machinery Co., Chicago, Ill.

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Straub Machinery Co., Cincinnati, O.

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Wicker Bros., Pittsburg, Pa.

Wolf, L. &amp; Bro., Cincinnati, O.

Wood &amp; Co., Chicago, Ill.

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Barnes, W. F. &amp; J. Co., Rockford, Ill.

Bickford Drill &amp; Tool Co., Cincinnati, O.

Cincinnati Milling Machine Co., Cincinnati, O.

Greaves, Klusman &amp; Co., Cincinnati, O.

Landis Tool Co., Waynesboro, Pa.

McCabe, J. J., New York, N. Y.

Pratt &amp; Whitney, Hartford, Conn.

Price, S. M., Machinery Co., Norfolk, Va.

Savannah Loco. Works &amp; Supply Co., Savannah, Ga.

Schumacher &amp; Boye, Cincinnati, O.

Walke, Henry, Co., Norfolk, Va.

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Oule, Mfg. Co., Rochester, N. Y.Mattresses.  
Perfection Mattress Co., Birmingham, Ala.Mechanical Draft.  
Allington & Curtis, Saginaw, Mich.

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Andrews &amp; Johnson Co., Chicago, Ill.

Cincinnati Exhaust &amp; Blow Pipe Co., Cincinnati, O.

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International Mercantile Agency, New York, N. Y.Herry-Co-Rounds.  
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Gibbes, W. H. &amp; Co., Columbia, S. C.

Greaves, Klusman &amp; Co., Cincinnati, O.

Landis Tool Co., Waynesboro, Pa.

McCabe, J. J., New York, N. Y.

Niagara Machine &amp; Tool Works, Buffalo, N. Y.

Pratt &amp; Whitney Co., Hartford, Conn.

Price, S. M., Machinery Co., Norfolk, Va.

Robinson, J. M., Mfg. Co., Cincinnati, O.

Roversford Foundry &amp; Machine Co., Roversford, Pa.

Savannah Loco. Works &amp; Supply Co., Savannah, Ga.

Schumacher &amp; Boye, Cincinnati, O.

Walke, Henry, Co., Norfolk, Va.

Whitton Machine Co., D. E., New London, Conn.

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Pittsburg Meter Co., E. Pittsburg, Pa.Meters. (Water.)  
Pittsburg Meter Co., E. Pittsburg, Pa.

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Praray, C. A. M. &amp; Co., Providence, R. I.

Robbins, O. A., Charlotte, N. C.

Shaw, Fred, Augusta, Ga.

Tompkins, D. A., Co., Charlotte, N. C.

Whaley, W. B. Smith &amp; Co., Columbia, S. C.

Wheeler &amp; Runge, Charlotte, N. C.

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Baird Mch. Co., Pittsburg, Pa.

Cincinnati Milling Machine Co., Cincinnati, O.

Walke, Henry, Co., Norfolk, Va.

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Gainesville Iron Works, Gainesville, Ga.

Greenwald Co., I. &amp; E., Cincinnati, O.

Hartfelder-Garbutt Co., Savannah, Ga.

Lombard Iron Works &amp; Supply Co., Augusta, Ga.

Mecklenburg Iron Works, Charlotte, N. C.

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Bartlett, C. O., & Snow Co., Cleveland, O.

Contractors' Supply &amp; Equipment Co., Chicago, Ill.

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Chattanooga Paint Co., Chattanooga, Tenn.

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Kasper Oats Cleaner Co., Chicago, Ill.Office Fixtures.  
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Galena-Signal Oil Co., Franklin, Pa.

Ironside Co., Columbus, O.

Miller Oil &amp; Supply Co., Indianapolis, Ind.

Robinson, Wm. C. &amp; Son, Co., Baltimore, Md.

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Petroleum Iron Works Co., Washington, Pa.

Rockwell Engineering Co., New York, N. Y.

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Gen. Mfg. Co., Pittsburg, Pa.

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Metropolitan Investment Co., Charleston, S. C.

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Rutter, C. H., Easton, Pa.

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Baltimore Engine Co., Baltimore, Md.

Boston Belting Co., Boston, Mass.

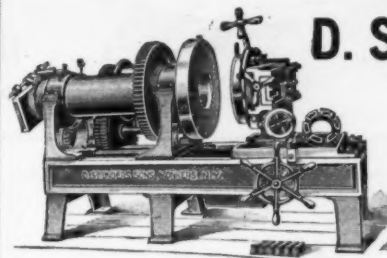
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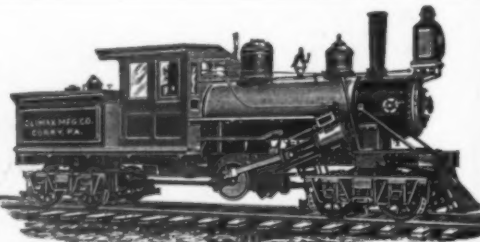
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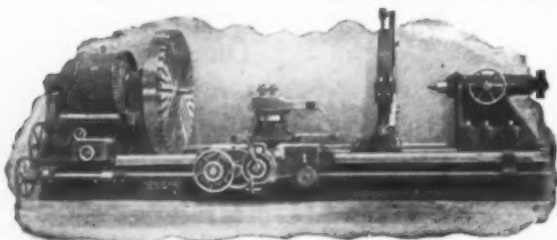
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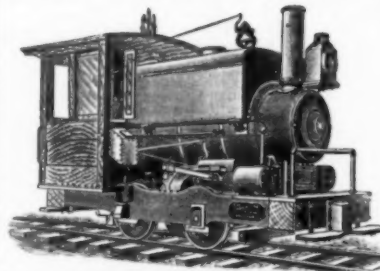
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Detroit Graphite Mfg. Co., Detroit, Mich.  
Dixon Crucible Co., Joseph, Jersey City, N. J.  
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Garrett, C. S., & Son, Co., Philadelphia, Pa.  
National Roofing & Supply Co., Louisville, Ky.  
Standard Paint Co., The, New York, N. Y.

**Paper.** (Sand, Emery.)  
Bader, Adamson & Co., Philadelphia, Pa.

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Adams, J. M., Baltimore, Md.

**Paste.** (Graphite Pipe Joint.)  
Wisconsin Graphite Co., Pittsburg, Pa.

**Pattern Makers' Machinery.**  
Fay, J. A., & Egan Co., Cincinnati, O.

**Patterns.** (Metal.)  
Cincinnati Pattern Works, Cincinnati, O.  
Richmond Pattern Works, Richmond, Va.  
Ryan, J. J., & Co., Chicago, Ill.

**Patterns.** (Wooden.)  
Cincinnati Pattern Works, Cincinnati, O.  
Richmond Pattern Works, Richmond, Va.

**Paving Material.**  
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Atchison Perforated Metal Co., Robert, Chicago, Ill.  
Beckley, A. J., Co., Garwood, N. J.  
Caldwell, H. W., & Son Co., Chicago, Ill.  
Harrington & King Perforating Co., Chicago, Ill.  
Hendrick Mfg. Co., The, Ltd., Carbondale, Pa.  
Ludlow-Saylor Wire Co., The, St. Louis, Mo.  
Mundt, Charles, & Sons, New York, N. Y.  
Stumpson, E. B., & Son, New York, N. Y.

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Gulf Refining Co., Baltimore, Pa.

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Bradley Pulverizer Co., Boston, Mass.  
Cameron & Barkley Co., Charleston, S. C.  
Cresson Co., Geo. V., New York, N. Y.  
Foss Mfg. Co., Springfield, O.  
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Link-Belt Engineering Co., Philadelphia, Pa.  
McLanahan-Stone Machine Co., Hollidaysburg, Pa.  
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Simpson, J. S., & G. F., Brooklyn, N. Y.  
Smith & Co., F. L., New York, N. Y.  
Tompkins, D. A., Co., Charlotte, N. C.  
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Walker & Elliott, Wilmington, Del.

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Ryan, J. J., & Co., Chicago, Ill.

**Phosphor Bronze Melting Co., Ltd.**, Philadelphia, Pa.  
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Caldwell, H. W., & Son Co., Louisville, Ky.  
Cresson Co., Geo. V., New York, N. Y.  
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Dimmick Pipe Co., Birmingham, Ala.  
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Glamorgan Pipe & Foundry Co., Lynchburg, Va.  
Moore, Edgar M., & Co., Pittsburg, Pa.  
U. S. Cast Iron Pipe & Foundry Co., Chattanooga, Tenn.  
Wood, B. D., & Co., Philadelphia, Pa.

**Pipe.** (Copper.)  
National Pipe Bending Co., New Haven, Conn.

**Pipe.** (Sheet Steel.)  
Wolf Co., Fred. W., Chicago, Ill.

**Pipe.** (Stitched.)  
American Spiral Pipe Works, Chicago, Ill.  
Girard Boiler & Mfg. Co., Girard, O.  
Keefer, E. Co., Williamsport, Pa.  
Petroleum Iron Works Co., Washington, Pa.  
Pollock, Wm. B., Co., Youngstown, O.

**Pipe.** (Sewer and Culvert.)  
Georgia Vitreous Brick & Clay Co., Augusta, Ga.  
Kriegsaber, V. H., Atlanta, Ga.  
Maryland Lime & Cement Co., Balto., Md.  
Pomona Terra Cotta Co., Pomona, N. C.  
Stevens' Sons Co., H., Macon, Ga.  
Warner Co., Chas., Wilmington, Del.

**Pipe.** (Sheet Steel.)  
Dixie Mfg. Co., Baltimore, Md.

**Pipe.** (Spiral Riveted.)  
American Spiral Pipe Works, Chicago, Ill.

**Pipe.** (Wrought Iron.)  
Bourne-Fuller Co., Cleveland, O.  
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General Fire Extinguisher Co., Providence, R. I.  
Simmons, John, Co., New York, N. Y.

**Pipe Cutting and Threading Mach.**  
Reed Mfg. Co., Erie, Pa.

**Pipe Fittings.**  
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**Pipe Fittings.**  
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Latrobe Steel Co., Philadelphia, Pa.

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Dart Mfg. Co., E. M., Providence, R. I.

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Savannah Locomotive & Car Works, Savannah, Ga.  
Walke, Henry, Co., Norfolk, Va.

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Rushnell Press Co., G. H., Thompsonville, Conn.  
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Gibbes, W. H., & Co., Columbia, S. C.  
Tompkins, D. A., Co., Charlotte, N. C.  
Walk & Murdoch Iron Works, Charleston, S. C.  
Watson-Stillman Co., New York, N. Y.

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Smith, S. Morgan, Co., York, Pa.  
Williams, M. F., Mfg. Co., St. Louis, Mo.  
Wood's T. B., Sons, Chambersburg, Pa.

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Caldwell, H. W., & Son Co., Louisville, Ky.  
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Federal Mfg. Co., Milwaukee, Wis.  
Lane Mfg. Co., Montpelier, Vt.  
Onida Steel Pulley Co., Onida, N. Y.  
Price, S. M., Machinery Co., Norfolk, Va.  
Saginaw Mfg. Co., Saginaw, Mich.  
Smith, H. B., Machine Co., Smithville, N. J.

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Federal Mfg. Co., Milwaukee, Wis.  
Onida Steel Pulley Co., Onida, N. Y.

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Caldwell, H. W., & Son Co., Chicago, Ill.  
Case Mfg. Co., Columbus, O.  
Cresson Co., Geo. V., New York, N. Y.  
Fay, J. A., & Egan Co., Cincinnati, O.  
Federal Mfg. Co., Milwaukee, Wis.  
Gainesville Iron Works, Gainesville, Ga.  
Golden's Foundry & Machine Co., Columbus, Ga.  
Greenwald Co., J. & E., Cincinnati, O.  
Jeffrey Mfg. Co., The, Columbus, O.  
Lane Mfg. Co., Montpelier, Vt.  
Link-Belt Engineering Co., Philadelphia, Pa.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
Marland Foundry & Machine Co., Baltimore, Md.  
Minster Machine Co., Minster, O.  
Nordvike & Marmon Co., Indianapolis, Ind.  
Price, S. M., Machinery Co., Norfolk, Va.  
Schofield, J. S., Sons Co., Macon, Ga.  
Smith, H. B., Machine Co., Smithville, N. J.  
Tompkins, D. A., Co., Charlotte, N. C.  
Valley Iron Works, Williamsport, Pa.  
Wolf Co., Chambersburg, Pa.  
Woods, T. B., Sons, Chambersburg, Pa.

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American Machine Co., Wilmington, Del.

**Pumps.** (Centrifugal.)  
Erie Pump & Engine Co., Erie, Pa.  
Southwark Foundry & Machine Co., Philadelphia, Pa.  
Wood & Co., R. D., Philadelphia, Pa.

**Pumps.** (Hand.)  
Flint & Walling Mfg. Co., Kendallville, Ind.

**Pumps.** (Hydraulic.)  
American Steam Pump Co., Battle Creek, Mich.  
Cardwell-Machine Co., Richmond, Va.  
Niagara Hydraulic Engine Co., Chester, Pa.  
Watson-Stillman Co., New York, N. Y.

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Bacon Air Lift Co., New York, N. Y.  
Consolidated Air Lift Co., Washington, D. C.  
Ingersoll Sergeant Drill Co., New York, N. Y.

**Pumps.** (Power Roller-Feed.)  
Cameron Steam Pump Works, A. S., New York, N. Y.  
McGowan Co., John H., Cincinnati, O.  
Park Mfg. Co., Charlotte, N. C.  
Worthington, Henry R., New York, N. Y.

**Pumps.** (Steam.)  
Alberger Condenser Co., New York, N. Y.  
American Steam Pump Co., Battle Creek, Mich.  
Cameron Steam Pump Works, A. S., New York, N. Y.  
Cameron & Barkley Co., Charleston, S. C.  
Cook Well Co., St. Louis, Mo.  
Downie Pump Co., Downsville, Pa.  
Gibbes, W. H., & Co., Columbia, S. C.  
McGowan, John H., & Co., Cincinnati, O.  
Murray Iron Works, Burlington, Iowa.  
Price, S. M., Machinery Co., Norfolk, Va.  
Pulsometer Steam Pump Co., New York, N. Y.  
Savannah Locomotive & Car Works, Savannah, Ga.  
Scranton Steam Pump Co., Scranton, Pa.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Worthington, Henry R., New York, N. Y.

**Pumps.** (French.)  
Edison Manufacturing Co., Boston, Mass.

**Pumping Machinery.**  
American Steam Pump Co., Battle Creek, Mich.  
Bacon Air Lift Co., New York, N. Y.  
Cameron, A. S., Steam Pump Works, New York, N. Y.  
Cook Well Co., The, St. Louis, Mo.  
Downie Pump Co., Downsville, Pa.  
Erie Pump & Engine Co., Erie, Pa.  
Myers, F. S., & Bro., A. S., Island, O.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Walke, Henry, Co., Norfolk, Va.  
Wood, B. D., & Co., Philadelphia, Pa.  
Worthington, Henry R., New York, N. Y.

**Punch, Shear and Bender Combined**  
Kidder, J. F., Mfg. Co., Burlington, Vt.

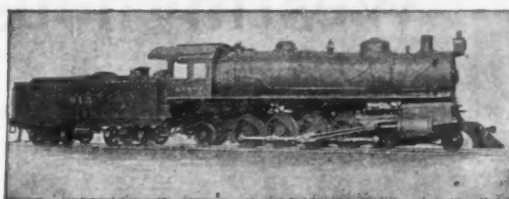
**Punching and Shearing Machinery.**  
Bertin & Co., Cambridge, Mass.  
Kidder, J. F., Mfg. Co., Burlington, Vt.  
Niagara Machine & Tool Works, Buffalo, N. Y.  
Robinson, J. M., Mfg. Co., Cincinnati, O.  
Roversford Foundry & Machine Co., Roversford, Pa.  
Wood, B. D., & Co., Philadelphia, Pa.

**Quarrying and Stonecutting Mch.**  
Ingersoll-Sergeant Drill Co., New York, N. Y.  
Rand Drill Co., New York, N. Y.  
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American Locomotive Co., New York, N. Y.  
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Baldwin Leiby Co., The, Charleston, S. C.  
Bourne-Fuller Co., Cleveland, O.  
Birmingham Rail & Locomotive Co., Birmingham, Ala.  
Clark & Hines, Baltimore, Md.  
Cincinnati Equipment Co., Cincinnati, O.  
Continental Car & Equipment Co., New York, N. Y.  
Contractors Equipment Co., Philadelphia, Pa.  
Cox, Jr., Justice, & Co., Ltd., Philadelphia, Pa.  
Davis & Bryan, Philadelphia, Pa.  
Elkhart Frog & Crossing Works, Elkhart, Ind.  
Fitz-Hugh-Luther Co., Chicago, Ill.  
Harper Machinery Co., New York, N. Y.  
Hartfelder-Garbutt Co., Savannah, Ga.  
Heiser, N. C., & Co., Philadelphia, Pa.  
Hicks, F. M., Chicago, Ill.  
Hitner, H. A., Sons, Philadelphia, Pa.  
Johnson, Chas. F., Buffalo, N. Y.  
Joseph Iron Co., Isaac, Cincinnati, O.  
Kilby Locomotive & Machine Works, Anniston, Ala.  
Kopp, Arthur, New York, N. Y.  
Low, Edgar S., Co., Pittsburg, Pa.  
Maclear, J. H., & Co., Suffolk, Va.  
Males Co., Cincinnati, O.  
May & Spalding, Atlanta, Ga.  
New York Equipment Co., New York, N. Y.  
Patapasco Machinery & Supply Co., Baltimore, Md.  
Porter, H. E., Co., Pittsburg, Pa.  
Poullier & Co., Philadelphia, Pa.  
Robinson & Orr, Pittsburg, Pa.  
Sabel Bros., Jacksonville, Fla.  
Savannah Loco. Wks & Supply Co., Savannah, Ga.  
Smith-Courtney Co., Richmond, Va.  
Steel Rail Supply Co., The, New York, N. Y.

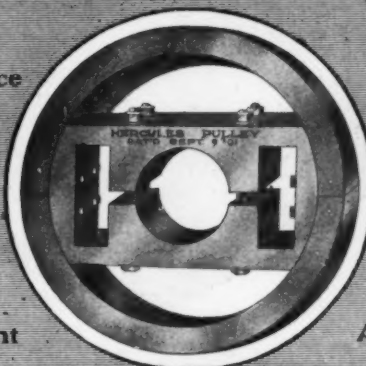
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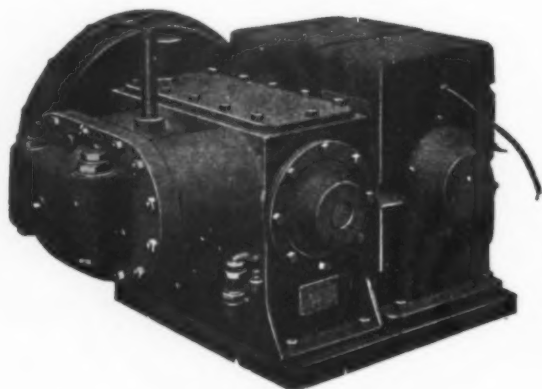
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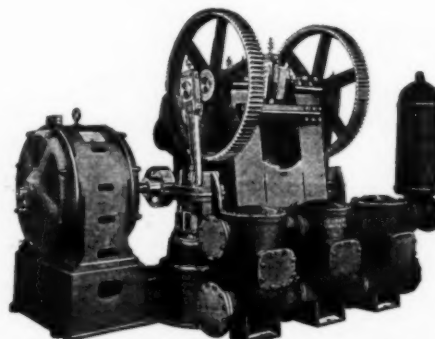
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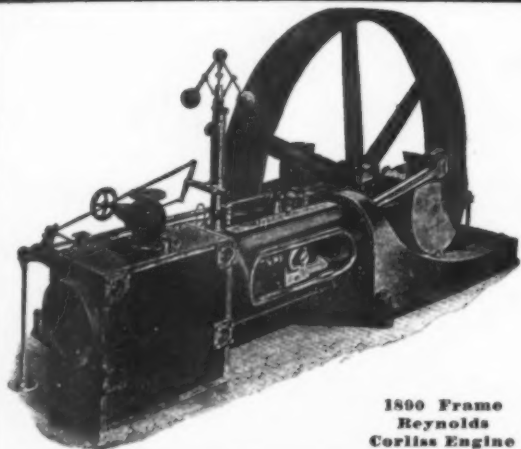
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Cortright Metal Roofing Co., Philadelphia, Pa.  
Merchant & Co., Inc., Philadelphia, Pa.  
Montross Metal Shingle Co., Camden, N. J.  
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McClaffie & Kouns, Atlanta, Ga.  
Petroleum Iron Works Co., Washington, Pa.  
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National Seal Works, Richmond, Va.  
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Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E., Williamsport, Pa.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
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Petroleum Iron Works Co., Washington, Pa.  
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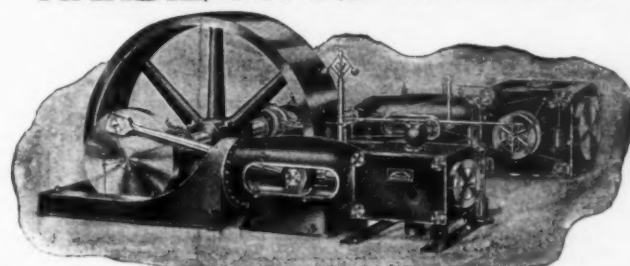
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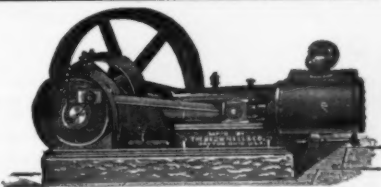


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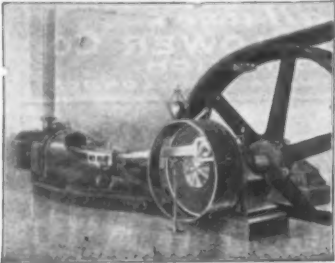
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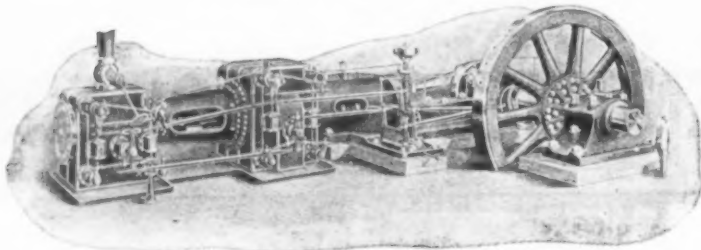
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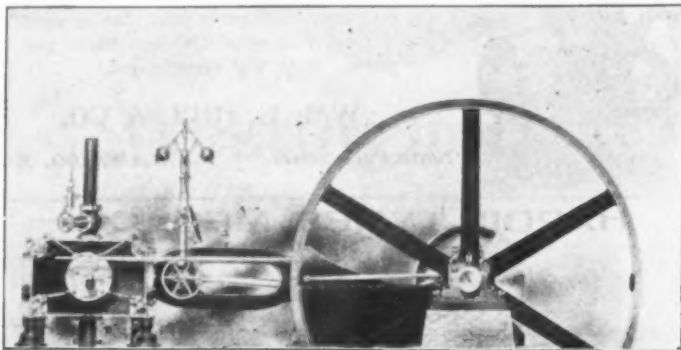


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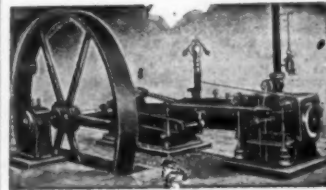
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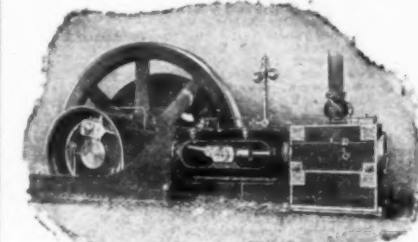
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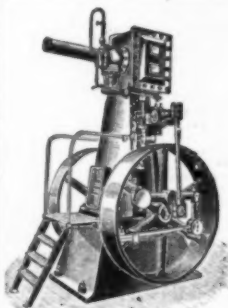
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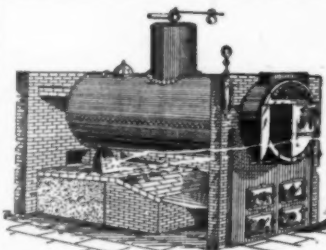
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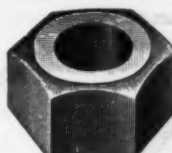


## Classified Index of Articles Advertised

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**Steel.** (Manufacturers of.)  
American Sheet Steel Co., New York, N. Y.  
Bourne-Fuller Co., Cleveland, O.  
Chester Steel Castings Co., Philadelphia, Pa.  
Globe Rolling Mill, Cincinnati, O.  
Kennedy, Walter, Pittsburg, Pa.  
Pamlico Steel Co., Paterson, N. J.  
The Diamond Steel Co., Wilmington, Del.  
**Steel Buildings.** (Designers, Builders)  
Easton Foundry & Machine Co., Easton, Pa.  
Frink & Hazen, Baltimore, Md.  
General Supply & Construction Co., New York, N. Y.  
Pamlico Steel Co., Paterson, N. J.  
Scalfe, Wm. B., & Sons Co., Pittsburg, Pa.  
Schreiber, L., & Sons Co., Cincinnati, O.  
Va. Bridge & Iron Co., Roanoke, Va.  
**Steel Couplers.** (Automatic.)  
Latrobe Steel & Coupler Co., Philadelphia, Pa.  
**Stencils.**  
Hullet, John G., & Co., Baltimore, Md.  
**Stills.** (Turpentine.)  
McMillan Bros. Co., Mobile, Ala.  
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Hullet, John G., & Co., Baltimore, Md.  
Middleton, J. W., & Co., Chicago, Ill.  
National Seal Works, Richmond, Va.  
**Stokers.** (Mechanical.)  
Westinghouse, Church, Kerr & Co., Pittsburg, Pa.  
Westinghouse Machine Co., Pittsburg, Pa.  
**Storage Receipts.**  
Baltimore Fidelity Warehouse Co., Baltimore, Md.  
**Structural Steel and Iron.**  
Belmont Iron Works, Philadelphia, Pa.  
Bourne-Fuller Co., Cleveland, O.  
Chesapeake Iron Works, Baltimore, Md.  
Easton Foundry & Machine Co., Easton, Pa.  
Eureka Supply Co., Chattanooga, Tenn.  
General Supply & Construction Co., New York, N. Y.  
Girard Boiler & Mfg. Co., Girard, O.  
Globe Rolling Mill, Cincinnati, O.  
Moore, Edgar M., & Co., Pittsburg, Pa.  
Pamlico Steel Co., Paterson, N. J.  
Scalfe, Wm. B., & Sons Co., Pittsburg, Pa.  
Schreiber, L., & Sons Co., The Cincinnati, O.  
Virginia Bridge & Iron Co., Roanoke, Va.  
**Switchboards, Switches, etc.**  
Electrical Material Co., Baltimore, Md.  
Standard Electric Co., Norfolk, Va.  
Wesco Supply Co., St. Louis, Mo.  
Westinghouse Electric & Mfg. Co., Pittsburg, Pa.  
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Flint & Walling Mfg. Co., Kendallville, Ind.  
Gardner Boiler & Mfg. Co., Girard, O.  
Hammond Iron Works, Warren, Pa.  
Harry Bros. Co., Dallas, Tex.  
Hartley Boiler Works, Montgomery, Ala.  
Keeler Co., E. Williamsport, Pa.  
Lombard Iron Works & Supply Co., Augusta, Ga.  
Means & Fulton Iron Works, Birmingham, Ala.  
McGuffee & Kounts, Alliance, O.  
Petroleum Iron Works Co., Washington, Pa.  
Pollock, Wm. B., Co., Youngstown, O.  
Scalfe, W. B., & Sons Co., Pittsburg, Pa.  
Scholfield, J. B., & Sons Co., Macon, Ga.  
Smith Co., B. Morgan, York, Pa.  
Tompson, D. A., Co., Charlotte, N. C.  
Valk & Murdoch Iron Works, Charleston, S. C.  
Virginia Bridge & Iron Co., Roanoke, Va.  
Vogt, Henry, Machine Co., Louisville, Ky.  
Wood, B. D., & Co., Philadelphia, Pa.  
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Caldwell, W. E., Co., Louisville, Ky.  
Cypress Lumber Co., Apalachicola, Fla.  
Davis, G. M., & Son, Palatka, Fla.  
Lewis, H. F., & Co., Ltd., New Orleans, La.  
Tupelo Tank Co., Mobile, Ala.  
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Lufkin Rule Co., Saginaw, Mich.  
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Benbow Co., The Philadelphia, Pa.  
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Alexander, Jr., & Co., E. B. Charlotte, N. C.  
Electric Supply Co., Savannah, Ga.  
Electrical Material Co., Baltimore, Md.  
Piedmont Electric Co., Asheville, N. C.  
Standard Electric Co., Norfolk, Va.  
Wesco Supply Co., St. Louis, Mo.  
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International Cerecoting & Const. Co., Galveston, Tex.  
Standard Pole & Tie Co., New York, N. Y.  
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Merchant & Co., Inc., Philadelphia, Pa.  
**Terra Cotta.**  
Kriegshaber, V. H., Atlanta, Ga.  
Romona Terra Cotta Co., Romona, N. C.  
Stevens, H., Sons, Co., Macon, Ga.  
**Textile Machinery.** (See Cotton Mill Mach.)  
**Threshers.**  
Farquhar, A. B., Co., York, Pa.  
Cardwell Machine Co., Richmond, Va.  
Gibbs, W. H., & Co., Columbia, S. C.  
**Tin.** (Roofing.)  
American Tinplate Co., New York, N. Y.  
**Tinplate.**  
American Tinplate Co., New York, N. Y.  
Merchant & Co., Inc., Philadelphia, Pa.  
**Tires, Steel.** (Locomotive and Car.)  
Globe Rolling Mill, Cincinnati, O.  
Latrobe Steel Co., Philadelphia, Pa.  
**Tobacco Machinery.**  
Backus Iron & Brass Works, Dayton, O.  
Cardwell Machine Co., Richmond, Va.  
**Tools.** (Machine.) (See Machine Tools.)  
**Tools.** (Mechanists.)  
Barnes, W. F. & John, Co., Rockford, Ill.  
Home Twist Drill & Machine Co., New Bedford, Mass.  
Polk, A. J., & Son, Millersburg, Pa.  
Pratt & Whitney Co., Hartford, Conn.  
**Tools.** (Pneumatic.)  
Rand Drill Co., New York, N. Y.  
**Tools.** (Tinner.)  
Mastara Machine & Tool Works, Buffalo, N. Y.  
**Tools.** (For Rwy. Rep. Shops.) (See Port. Tools.)  
**Torches.**  
Gem Mfg. Co., Pittsburg, Pa.  
Wall, F. Mfg. Co., Allegheny, Pa.  
**Towers.** (Steel and Wood.)  
Caldwell, W. E., Co., Louisville, Ky.  
Flint & Walling Mfg. Co., Kendallville, Ind.  
Tompkins, D. A., Co., Charlotte, N. C.  
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American Ship Windlass Co., Providence, R. I.  
**Tramway.** (Overhead.)  
Cohoes Iron Foundry & Machine Co., Cohoes, N. Y.  
New Jersey Fdy. & Mch. Co., New York, N. Y.  
Spedel, J. G., Reading, Pa.  
**Tramway.** (Wire Rope.)  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Caldwell, H. W., & Sons Co., Chicago, Ill.  
Creson Co., George V., New York, N. Y.  
Flory, S. Mfg. Co., Bangor, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
Lidgerwood Mfg. Co., New York, N. Y.  
Link-Belt Engineering Co., Niagara (Phila.), Pa.  
McLanahan-Stone Machine Co., Hollidaysburg, Pa.  
Trenton Iron Co., Trenton, N. J.  
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Hornor, W. F., Mfg. Co., Danville, Va.  
**Tree Cleaners.**  
Gem Mfg. Co., Pittsburg, Pa.  
**Tubing.**  
Ludlow-Saylor Wire Co., The St. Louis, Mo.  
**Turbines.** (See Water Wheels.)  
**Turbines.** (Steam.)  
Westinghouse, Church, Kerr & Co., Pittsburg, Pa.  
Westinghouse Machine Co., Pittsburg, Pa.  
**Turntables.**  
Koppel, Arthur, New York City.  
Males Co., Cincinnati, O.  
Pamlico Steel Co., Paterson, N. J.  
Virginia Bridge & Iron Co., Roanoke, Va.

**Valves.**  
Amer. Slin. Gauge & Valve Mfg. Co., Jam. Plain, Mass.  
Boston Belting Co., Boston, Mass.  
Columbia Supply Co., Columbia, S. C.  
Crosby Steam Gauge & Valve Co., Boston, Mass.  
General Fire Extinguisher Co., Providence, R. I.  
Hammorgan Pipe & Foundry Co., Lynchburg, Va.  
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Ludlow Valve Mfg. Co., Troy, N. Y.  
Lunkenheimer Co., Cincinnati, O.  
Simmons, John, Co., New York City.  
Vorhees Rubber Mfg. Co., Jersey City, N. J.  
Wolf, Fred W., & Co., Chicago, Ill.  
Wood, B. D., & Co., Philadelphia, Pa.  
**Veneer.**  
Burton Veneer Co., Montgomery, Ala.  
**Veneer Machines.**  
Coe Mfg. Co., The Painesville, O.  
Titus, E. E., Petersburg, Va.  
**Ventilators.**  
Dowman-Doxier Mfg. Co., Atlanta, Ga.  
Merchant & Co., Inc., Philadelphia, Pa.  
Wulf, W. C., & Co., Louisville, Ky.  
**Vices.**  
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Fay, J. A., & Egan Co., Cincinnati, O.  
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Bailey-Lobby Co., The Charleston, S. C.  
Cameron & Barkley Co., Charleston, S. C.  
McLanahan-Stone Co., Hollidaysburg, Pa.  
**Warehouse.** (Fidelity.)  
Baltimore Fidelity Warehouse Co., Baltimore, Md.  
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Electrical Material Co., Baltimore, Md.  
Imhauser & Co., New York City.  
Nanz & Co., New York, N. Y.  
Waggoner Watchman Clock Co., Grand Rapids, Mich.  
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Roanoke Navigation & Water Power Co., Weldon, N. C.  
**Waterproof Cellular Engineer.**  
Gilbreth, Frank B., Boston, Mass.  
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Reologie Governor Works, Akron, O.  
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Scalfe, Wm. B., & Sons Co., Pittsburg, Pa.  
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Lane Mfg. Co., Montpelier, Vt.  
Lefel, James, & Co., Springfield, O.  
Munson Bros. Co., Utica, N. Y.  
Norris, Burnham & Co., Inc., Glen Rock, Pa.  
Riedon-Alcott Turbine Co., Mount Holly, N. J.  
Smith Co., B. Morgan, York, Pa.  
Stillwell-Bierce & Smith-Valle Co., Dayton, O.  
Westinghouse, Church, Kerr & Co., Pittsburg, Pa.  
Westinghouse Mch. Co., Pittsburg, Pa.  
Wolf Co., Chambersburg, Pa.  
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Andrews, Perry & Bro., Atlanta, Ga.  
Bacon Air Lift Co., New York, N. Y.  
Cook Well Co., St. Louis, Mo.  
Ford, Isaac H., New York, N. Y.  
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Cook Well Co., St. Louis, Mo.  
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Amer. Slin. Gauge & Valve Mfg. Co., Jam. Plain, Mass.  
Crosby Steam Gauge & Valve Co., Boston, Mass.  
Lunkenheimer Co., Cincinnati, O.  
**White Lead.**  
French, Samuel H., & Co., Philadelphia, Pa.  
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American Ship Windlass Co., Providence, R. I.  
**Windmills.**  
Flint & Walling Mfg. Co., Kendallville, Ind.  
**Window Frames.** (FIREPROOF.)  
Wulf, W. C., & Co., Louisville, Ky.  
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**Wire.** (Barbed Wire, etc.)  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Ludlow-Saylor Wire Co., The St. Louis, Mo.  
Roebbling's, J. A., Sons Co., Trenton, N. J.  
**Wire Cloth.** (Iron, Steel, Brass, etc.)  
Buffalo Wire Works Co., Buffalo, N. Y.  
Caldwell, H. W., & Sons Co., Chicago, Ill.  
Meyers, Fred, J., Mfg. Co., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.  
**Wire Goods.**  
Boles Iron & Wire Works, J. E., Detroit, Mich.  
Buffalo Wire Works Co., Buffalo, N. Y.  
Dufur & Co., Baltimore, Md.  
Eureka Supply Co., Chattanooga, Tenn.  
Ludlow-Saylor Wire Co., The St. Louis, Mo.  
Meyers Mfg. Co., The Fred J., Hamilton, O.  
New Jersey Wire Cloth Co., Trenton, N. J.  
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New Jersey Wire Cloth Co., Trenton, N. J.  
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Contractors Plant Mfg. Co., Buffalo, N. Y.  
Hazard Mfg. Co., Wilkes Barre, Pa.  
Lidgerwood Mfg. Co., New York, N. Y.  
Roebbling's, J. A., Sons Co., Trenton, N. J.  
Trenton Iron Co., Trenton, N. J.  
**Wire Rope Filler.**  
Broderick & Bascom Rope Co., St. Louis, Mo.  
Ironides Co., Columbus, O.  
**Wire Rope Shields.**  
Ironides Co., Columbus, O.  
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De Loach Mill Mfg. Co., Atlanta, Ga.  
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Hermann Mch. Co., Williamsport, Pa.  
Huther Bros., Rochester, N. Y.  
Lane Mfg. Co., Montpelier, Vt.  
Leland, F. J., Knoxville, Tenn.  
Miller Oil & Supply Co., Indianapolis, Ind.  
Moshannon Mfg. Co., Phillipsburg, Pa.  
Ober Mfg. Co., Chagrin Falls, O.  
Root, B. M., York, Pa.  
Shimer, Samuel J., & Sons, Milton, Pa.  
Smith-Courtney Co., Richmond, Va.  
Smith, H. B., Machine Co., Smithville, N. J.  
Stratton & Bragg Co., Petersburg, Va.  
Walke, Henry, Co., Norfolk, Va.  
Whitney, B. D., & Son, Winchendon, Mass.  
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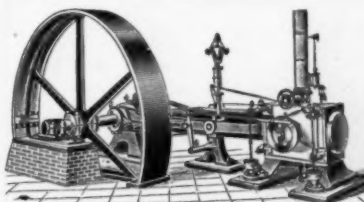
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Dept. M.

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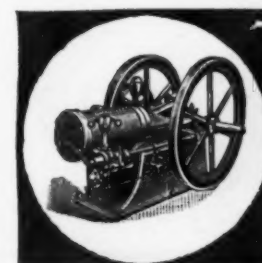
COLUMBUS MACHINE CO.

Catalogue G.

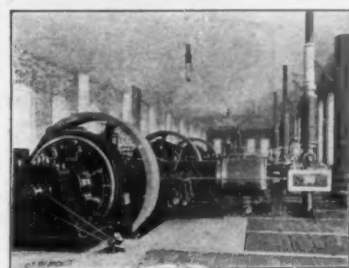
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STANDS SUPREME  
LET US TELL YOU WHY  
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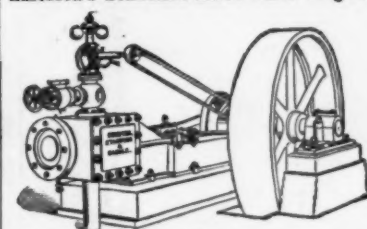
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ENGINESHorizontal and Vertical Single Valve  
Engines.  
Horizontal and Vertical Corliss Valve  
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UNEQUALLED in regulation.  
SUPERIOR in design and construction.

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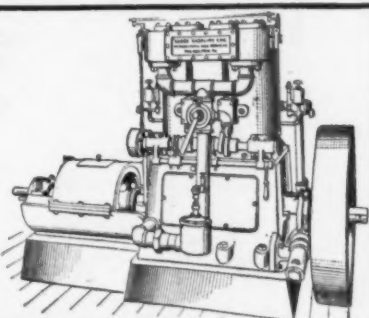
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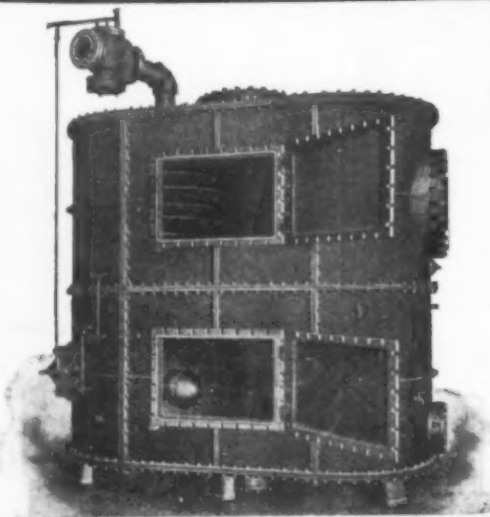
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This appliance is productive of the greatest possible economy in a steam plant. By its use you can heat six pounds of cold water with one pound of exhaust steam from an initial temperature of say 50° F. right up to the boiling point (or more than nine pounds from 100° F.), and for every 10° thus gained you will save 1% of all the coal used under your boilers; that is, taking water at 50° the saving will be at least 16%, and more likely 19%.

### THE STILWELL HEATER

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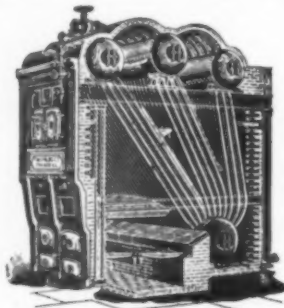
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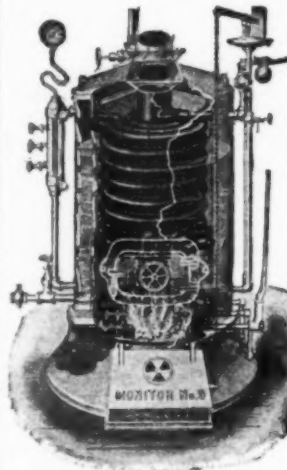


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Generator Mfg. Co.**

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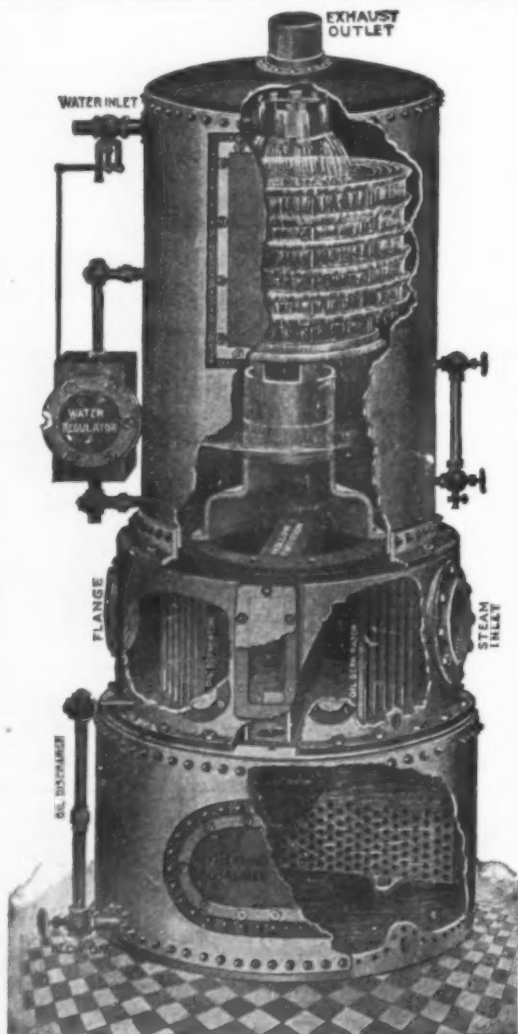
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Maintains constant temperature of the feed water of 206° to 212°.

Heats more water with less steam than any other.

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## IMPROVED BERRYMAN Water Tube

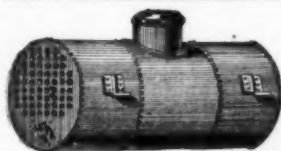
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Its PERFECT CIRCULATION of the water gives the highest  
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Provided with a SHAPED SEAMLESS DRAWN BRASS TUBES  
and so constructed that it CANNOT LEAK under the highest  
boiler pressure it is possible to carry.

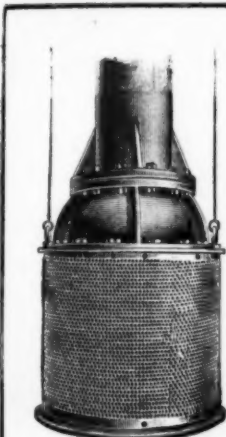
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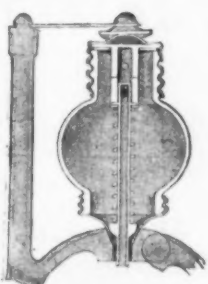


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is provided with two sets of cylindrical  
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have refuse removed therefrom. The  
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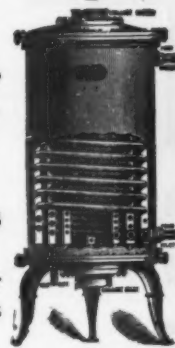
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plicity, in addi-  
tion to its efficien-  
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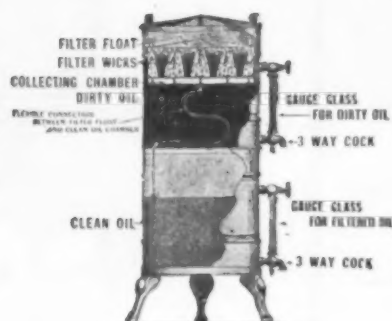
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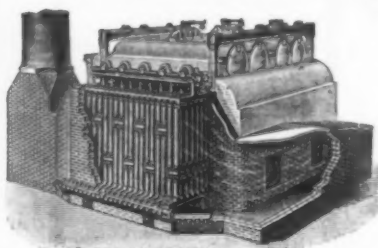
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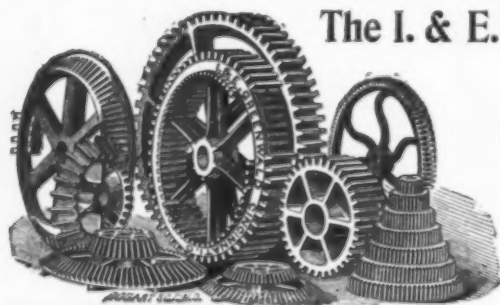
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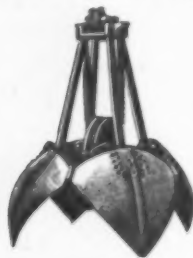
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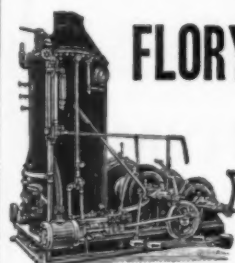
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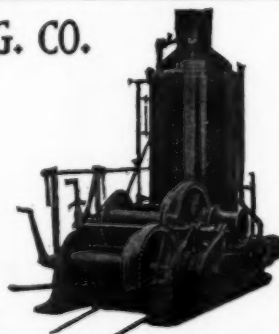
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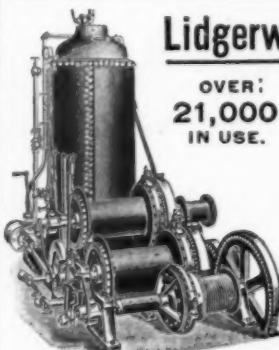
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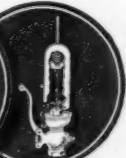
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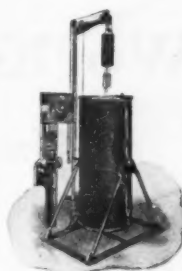
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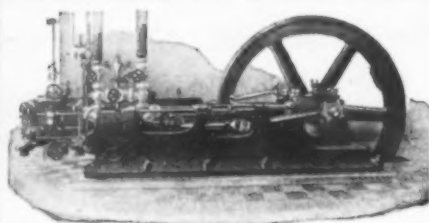
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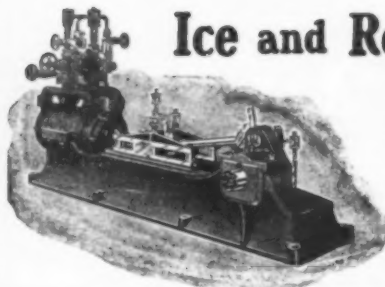
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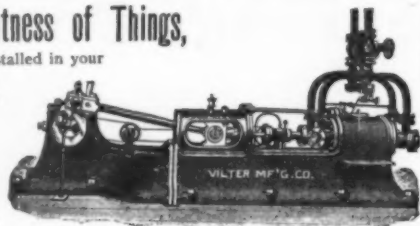
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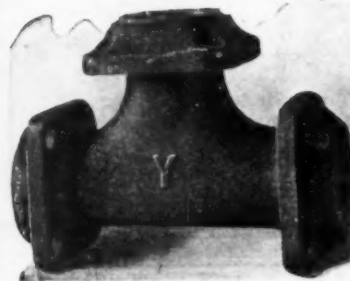
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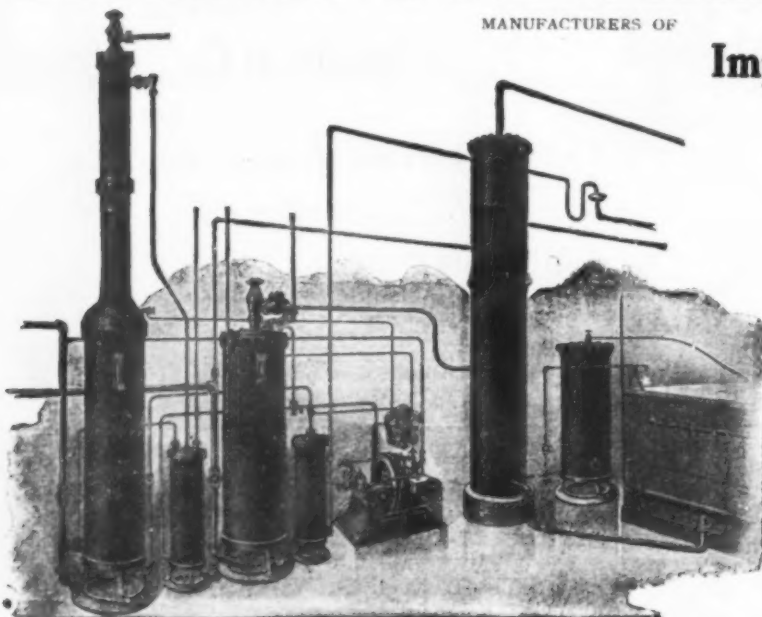
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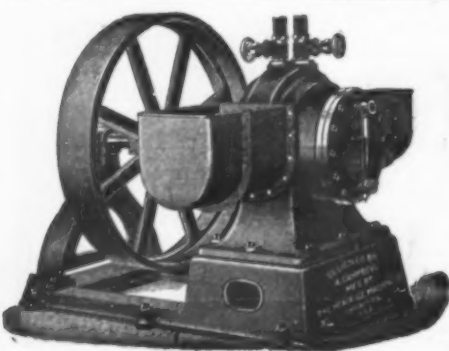
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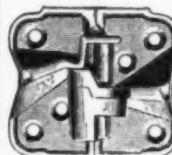
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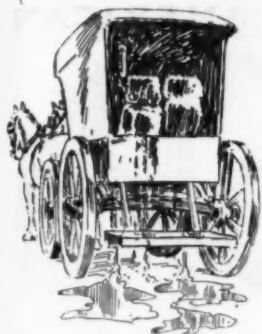
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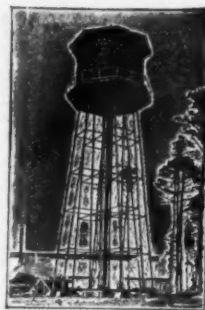
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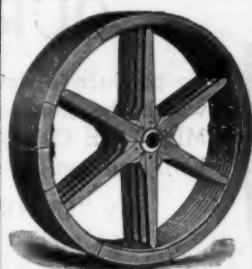
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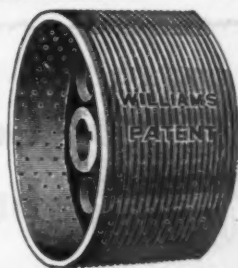
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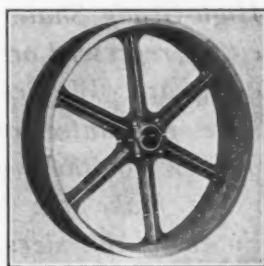
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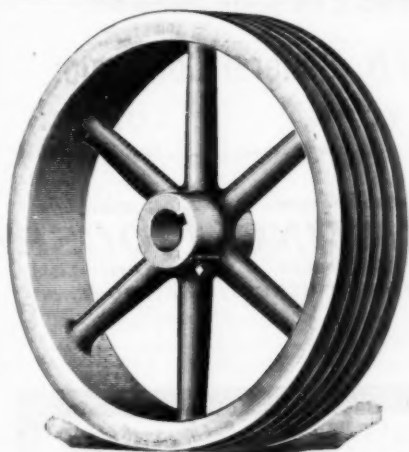
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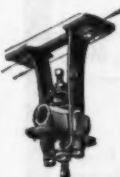
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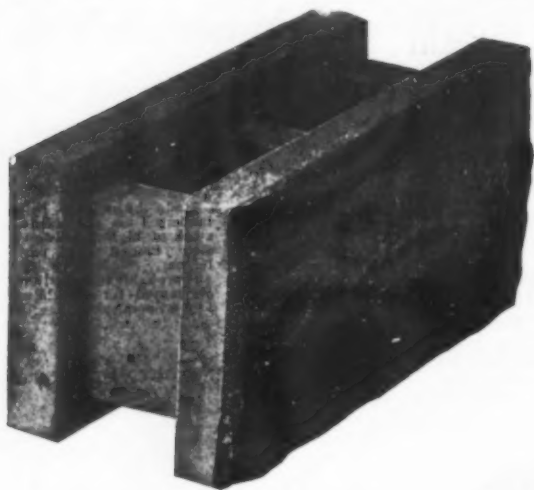
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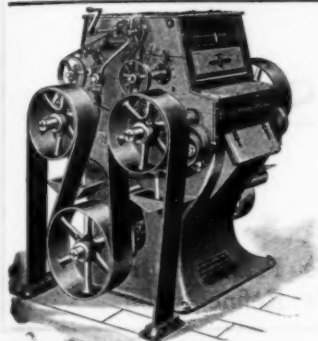
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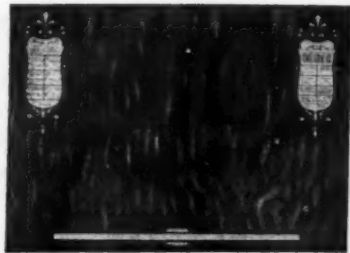
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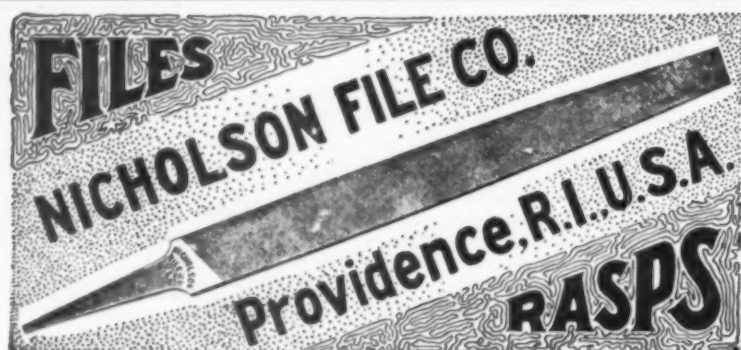
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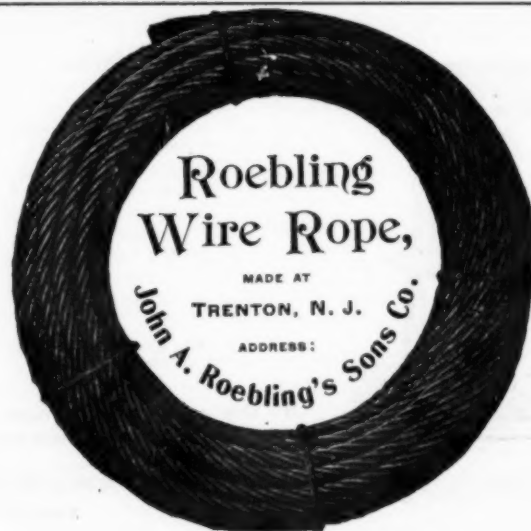
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# MANUFACTURERS' RECORD.

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER.

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BALTIMORE, NOVEMBER 26, 1903.

### COPY FOR ADVERTISEMENTS.

Advertising copy (changes or new advertisements) should reach us Saturday Morning to insure insertion in the issue of the following week.

For the first issue in the month we should receive copy by Friday Morning of the week preceding.

THE DAILY BULLETIN of the Manufacturers' Record is published every business day in the year for the purpose of aiding manufacturers and business men generally who need to keep in daily touch with the new industrial, railroad and financial developments of the South and Southwest. Supplementing and in connection with the work of the Manufacturers' Record, it is an invaluable aid to all who are seeking business in the South and Southwest, the most wonderfully endowed section of America, where industrial, railroad and financial activity is creating an ever-widening market for machinery of all kinds, railroad equipment and building supplies, and for financial operations, etc., and where the knowledge and skill of the engineer and expert will find their largest field of operation.

The Daily Bulletin is intended simply to cover every day the work of the "Construction Department" of the Manufacturers' Record in reporting every new mining, manufacturing, railroad and financial enterprise organized in the South and Southwest, and it is not intended to be a general daily newspaper. To all who want to be advised every day of every new enterprise organized in that section it is invaluable.

### TO PROVE A NEW ACADIA.

In a letter to the Manufacturers' Record, referring to the Mississippi River Improvement and Levee Convention, held at New Orleans, Mr. B. H. Payne of St. Louis, assistant general passenger ticket agent of the Missouri Pacific system, writes:

An intelligent and comprehensive review of this work, as no doubt will appear in your valuable paper, will be of inestimable value to the interests of the great Mississippi valley. From the standpoint of soil, climate, healthy conditions, society, etc., there is no section of country in the world offering greater inducements today to the investor and homeseeker, and if a proper levee system is adopted and carried out, which can only be done through aggressive and organized work, this section of the country will prove in the years to come a new Acadia, and while prophecy in these modern days is a lost art, you will no doubt recall

from Longfellow's Evangeline that when the "quiet, happy citizens of Acadia" were banished they found a resting-place on the Plaquemine bayou, which is in this fertile country of the great Mississippi river valley.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 56 and 57.

### WEIGHT IN COMMERCE OF SOUTHERN PORTS.

A suggestive reflection of the generally recognized importance of Southern ports in American commerce is given in a study of the imports and exports at those ports, together with the figures of their respective populations, in comparison with similar facts about other parts of the country. The South is now actually producing in the neighborhood of 40 per cent. of the total exports of the country, although it embraces but about 30 per cent. of the total area of the country and contains less than one-third of the population. During the past fiscal year, too, Southern ports handled more than 35 per cent. of the total exports of the country, while of the \$38,418,613 increase in the value of exports over the preceding year \$35,342,395 was at Southern ports. It is thus seen that the South is doing much more per capita in the production of material for American commerce and in the handling of it than the rest of the country. When comparison is made of individual ports upon a similar basis, using the latest figures available of population, those of 1900, and of commerce, those of 1903, the striking exhibit of Southern ports in comparison with those of the rest of the country is made as follows:

Ports.	Population, 1900.
Baltimore.....	508,957
Boston.....	560,892
Brunswick.....	9,081
Charleston.....	55,807
Galveston.....	37,789
Mobile.....	38,469
New Orleans.....	287,104
Newport News.....	19,635
New York.....	3,437,202
Norfolk.....	46,624
Pensacola.....	17,747
Philadelphia.....	1,293,697
Portland.....	50,145
San Francisco.....	342,782
Savannah.....	54,244
Tampa.....	15,839
Wilmington.....	20,976

Of the seventeen typical ports, Galveston has the heaviest commerce per each of its inhabitants, \$2795, followed by Newport News, \$1518; Savannah, \$1017; Brunswick, \$948; Pensacola, \$832; Wilmington, \$727, and New Orleans, \$619. New York, with \$327, is less than all of these, and also less than Mobile, \$436, and Portland, Maine, \$378. San Francisco, with \$204, is close to Norfolk's \$200 and less than Tampa's \$248 and Baltimore's \$215. Of the selected ports, Charleston has the least weight in the South per inhabitant, \$124, and Philadelphia the least in the rest of the country, \$103, while Boston's \$310 is less than the weights of eight Southern ports.

To be sure, when it is borne in mind that comparatively little of the commerce actually originates in the ports which handle it, this per capita idea is

merely suggestive. How suggestive it is, though, is apparent when it is realized that Savannah, with 54,000 inhabitants, has a commerce annually of \$55,000,000, while Portland, Maine, with 50,000 inhabitants, has a commerce of \$18,000,000; that New Orleans, with 287,000 inhabitants, has a commerce of \$177,000,000, while Boston, with 560,000 inhabitants, has \$3,000,000 less; that Charleston's weight per each inhabitant is greater than Philadelphia's, and that Galveston, with 37,000 inhabitants, does a foreign business of \$105,632,206, while New York, with 3,437,000 inhabitants, ninety times the population of Galveston, does \$1,124,556,802 of foreign trade, less than eleven times as much as Galveston.

That many of these Southern ports are destined to be of far greater importance is shown by the figures of their commerce during the past twenty years compared with those for other ports, as follows:

Ports.	1883.	1903.	Inc. per cent.
Baltimore.....	\$69,602,530	\$109,507,664	57
Boston.....	134,908,824	174,437,030	29
Brunswick.....	1,558,343	8,610,402	452
Charleston.....	23,072,118	6,918,392	70
Galveston.....	31,140,759	105,632,206	239
Mobile.....	3,212,388	16,790,318	422
New Orleans.....	104,704,076	177,953,263	69
Newport News.....	1,527,944	29,907,190	1850
New York.....	857,430,637	1,124,556,802	31
Norfolk.....	18,631,903	9,355,243	49
Pensacola.....	2,096,130	14,779,495	605
Philadelphia.....	71,886,300	135,527,359	85
Portland.....	5,590,511	18,937,285	238
San Francisco.....	90,661,950	69,956,899	22
Savannah.....	23,296,628	55,178,248	136
Tampa.....	506,620	3,937,023	677
Wilmington.....	4,959,833	15,261,442	207
All ports.....	1,547,020,316	2,445,889,552	58

\*Included in Yorktown until 1888. †1890.

‡Decrease.

Between 1883 and 1903 the value of the exports and imports increased from \$1,547,020,316 to \$2,445,889,552, or \$898,-

Commerce, 1903.		Weight in commerce per each inhabitant.
Imports.	Exports.	
\$27,503,167	\$51,704,497	\$215
86,310,556	88,126,444	310
15,203	8,696,199	948
2,297,462	4,630,930	124
1,511,119	104,121,087	2795
4,169,040	12,621,275	436
28,880,744	149,072,519	619
4,298,799	25,508,391	1518
618,731,108	505,825,694	327
597,744	8,757,499	200
1,033,951	13,745,544	832
59,995,431	73,531,968	103
2,653,112	16,284,173	378
36,454,283	33,602,616	204
1,037,366	54,140,882	1017
2,297,721	1,639,302	248
294,688	14,966,754	727

\$69,236, equal to 58 per cent. This rate of increase was exceeded by Newport News, which had an advance of 1850 per cent.; Pensacola, 605 per cent.; Brunswick, 452 per cent.; Mobile, 422 per cent.; Galveston, 239 per cent.; Wilmington, 207 per cent.; Savannah, 136 per cent., and New Orleans, 69 per cent., of the Southern ports, Tampa making an advance in ten years of 677 per cent., and by two of the other ports—Philadelphia, which had an advance of 85 per cent., of Portland, 238 per cent. The rate of New York, which handled 55 per cent. of the total commerce in 1883 and 46 per cent. in 1903, was 31 per cent., which was exceeded by Baltimore's 57 per cent., and was slightly greater than Boston's 29 per cent. Two ports on the Atlantic coast and one on the Pacific—Charleston, Norfolk and San Francisco—showed a rate

of decline of 70, 49 and 22 per cent., respectively.

These declines and the comparative slow rate of increase at some points have part explanation in the case of San Francisco, for instance, in the annexation of Hawaii, which excludes the trade between the port and the new Territory from the category of foreign commerce; in the case of Norfolk in the barging of freight from terminals there to Newport News across Hampton Roads, and in the case of New York, Baltimore and Boston to the movement of the center of crop production farther west and to changes in the railroad situation in the Mississippi valley and contiguous territory. These last two influences are largely responsible for the rise in importance of ports on the Gulf and South Atlantic coasts, railroad construction, with the development of great terminals at points which are to be the strategic ones in American commerce, having restored the flow of outward-bound commerce to its natural downhill course. This flow, viewed by itself, makes a more striking exhibit for certain Southern ports than do the figures for exports and imports combined. But an advance in the value of imports in twenty years of from \$9,596,762 to \$28,880,744 at New Orleans, from \$18,255 to \$4,298,799 at Newport News, from \$374,382 to \$4,169,040 at Mobile, from \$498,891 to \$2,297,462 at Charleston, from \$483,281 to \$1,037,366 at Savannah, and from \$186,355 to \$597,744 at Norfolk, is rather prophetic. The next ten or twenty years, while not increasing the weight of commerce per each inhabitant of these natural distributors of commerce, will undoubtedly give them greater weight, as compared with older Atlantic coast ports especially; for the greater portion of the drainage area of the Mississippi and of the back country of the South Atlantic ports is the portion of the country yet to be developed.

### MISSISSIPPI IMPROVEMENT.

Part II of this week's issue of the Manufacturers' Record is devoted to the full stenographic report of the proceedings of the recent convention at New Orleans of the Interstate Mississippi River Improvement and Levee Association. That convention was one of the most important ever assembled in the Mississippi valley. Called primarily to emphasize the propriety and necessity of the completion of the improvement of navigation on the Mississippi river and the protection of dwellers in its alluvial portion under the auspices of the federal government, the convention in its attendance and in the words of encouragement received from the President of the United States, from United States senators, from representatives in Congress, from State governors, from the heads of great railroad systems and from business and commercial organizations demonstrated the national interest in the national task, with its work broadened out to include the improvement not only of the Mississippi, but of all its tributaries. The addresses at New Orleans embody-

ing the results of many years' experience and the findings of engineering science and revealing the interrelation of a number of broad undertakings of which a beginning has hardly been made, and the dominating position of the drainage area of the Mississippi and its tributaries in American agriculture, industry, trade and commerce, gathered together in this form and widely circulated should prove a valuable auxiliary to the men who are leading in the movement for a mighty task of national betterment.

#### FUEL FROM THE BOGS.

In a communication to the Boston Evening Transcript Mr. Edward Atkinson announces that the secret of the conversion of salt-water and fresh-water mud into commercial fuel has been solved, and that his purpose in calling attention some time ago to the potential of bog fuel has been accomplished, and that the subject is now being taken up in so many places and by such diverse methods that he feels that the experiments at the Insurance engineering experiment station at Boston and evidence from abroad have proved that in New England and many other sections distant from coal mines is the material that can be converted into domestic fuel at a cost lower than any coal can be secured. Regarding the process of conversion Mr. Atkinson writes:

Heretofore we have assumed that there might be questions in physics, chemistry and mechanics to be solved before this work could be established on a commercial scale, and that compression and possibly a bonding material other than that derived from the mud might be necessary in the conversion. The practice in Europe has developed the fact that in this mud there are forms of hydrocarbon in particles distinct from the fixed carbon which forms the great body of the solid in the material. These hydrocarbons are of the nature of starch or glucose, and when the mud is worked mechanically these particles are broken. The adhesive hydrocarbon then distributes itself throughout the mass, which, being molded into the form of briquettes or blocks, at once begins to lose the water content by rapid evaporation without artificial heat; the mass contracts and becomes in many instances as solid as ordinary bituminous coal. So dense and hard are some of these blocks now being made commercially in Holland that they have been substituted for bricks in the repairs or construction of their brick roadways. These hydrocarbon particles have been named in Germany Protozane. They will be investigated by our chemists. These bricks of artificial coal are made in Holland at a cost of less than one dollar per ton.

Mr. Atkinson's contention is that in this mud material is a source of supply of gaseous fuel and of materials for conversion into water or producing gas of most effective kind at a low cost, and that the material may be converted into coke at a lower cost and of purer quality than any other fuel that can be obtained in New England and in many other parts of the country, and that it may replace charcoal in the finer processes of metallurgy. He hopes that this marsh coal may be applied in larger plants, and urges that no time be lost in putting into effect a revolution in the generation of heat and power.

An artificial fuel famine, due to the strike in the anthracite coal region, gave, a year ago, a foretaste of conditions that may be expected when the coal supply of the world has been exhausted, unless a substitute shall have become available. The coal famine led to an expansion in the use of petroleum and of gas. But even they may be regarded as makeshifts almost as temporary as sources of heat and power as coal itself. To be sure, all the known resources of coal and oil have not been fully developed, and it is reasonable to believe that other re-

sources of the kind are yet to be discovered. But that is no reason why there should be any delay in the application of ingenuity to the conversion of other material into fuel, especially where such fuel may be secured more cheaply than coal or oil or wood. It is not likely that the demand for fuel of all kinds will diminish. It is quite probable that the world's supply of fuel will not always be as free as it should be unless new material becomes available. With scientists and manufacturers giving greater and greater study to the wastes of the household and of several industrial operations as possible bases for fuel, why should not the mud of New England bogs, of the Dismal swamp, of the Georgia savannas, of the Florida everglades, of the Louisiana marshes and of Western swamps be turned into coke or used for fuel in dry, briquetted form?

#### ITALIANS IN THE SOUTH.

The census of 1890 showed that Louisiana was one of the three States of the country in which the negroes outnumbered the whites. Its population included 559,193 negroes and 558,395 whites, of whom 48,840, or something more than 8 per cent., were foreigners. During the next ten years the whites became the majority in the State, the negro population increasing to 650,804, or 16.3 per cent., and the whites to 729,612, or 30.5 per cent. Of the whites, 51,853 were foreign-born, an increase of about 6 per cent. Of these foreigners, more than a third were Italians, and their number has been increasing since the census was made, and increasing, it is believed, to the advantage of Louisiana. According to a dispatch from New Orleans, the Duke of the Abruzzi, who has visited that city in command of an Italian cruiser, has learned that the condition of the Italians in Louisiana is all that could be expected. He did not find a single Italian out of work in the city, and in the State not one in need of assistance. The Duke reports among his immigrant fellow-countrymen a moral improvement as great as the industrial advance made by them. It appears that the Italians have taken to agriculture, and are rapidly replacing the negroes on the sugar plantations between New Orleans and Baton Rouge, most of them as they land going to the country to work on farms and plantations. A most significant statement in the report is that "the negro is easily ousted from the sugar plantations, the Sicilian peasants saving money from wages the negroes can barely live on." There is a suggestion for the expedition of the solution of the labor problem in parts of the South. It is understood that the Italian government is not retarding emigration, and if a few of the many thousands now leaving their native land could be induced to scatter through the plantations of the South, they, with their ability to work and their thrift, would promptly bring the negroes to their industrial senses.

False education for forty years has had an unfortunate effect upon the negro race, and has counteracted to the race's ill many of the excellent lessons learned by an older generation. In freedom the race, though commanding comparatively small wages, has become an expensive laborer, because of the lack of opportunity on the part of those who know the race best to train it is it should be trained. For forty years the whites of the South have, in the case of the negroes, been in the position of grown folks compelled to deal with children without the power to handle them as

children should be handled. The result for the child-race is exactly what should be expected for a child in similar plight. The evil can be corrected, and the immigration of some such race as the Italian seems to point the way to the correction. For as soon as it dawns upon the negro that he must work or starve, as soon as he is brought into competition with a laboring class that will work for even smaller wages than his and prosper, he will either get to work or get out. In the meantime the native whites or foreign whites who have become Americanized will have given the South greater independence of the negro in agriculture, already becoming more and more apparent in the cotton field and in the rice plantations, while it is fair to hope that the next few years may produce a revolution-making picking machine for the cotton field, and thus release a great mass of labor into other productive channels.

#### SEEKING TO REVIVE THE BLAIR BILL MENACE.

Evidence is accumulating that another drive, probably better organized than ever before, but having even less justification, is to be made at the federal treasury for millions upon millions of dollars to be expended upon lines of the long defunct Blair bill for the education of the negro. The Manufacturers' Record has for some months past warned the taxpayers of the country of the demand to be made upon them by theorists, blindly shutting their eyes to the facts of forty years utterly shattering their theories; by individuals committed professionally to any movement involving government expenditures for "education," and by a horde of individuals who see in such appropriations the chance for a salary grab and for making an easy living by uttering platitudes before legislative bodies, women's clubs, teachers' conventions and institutes, etc. Through the intimate association of promoters of the Southern Education Scheme and the National Bureau of Education, which shelters the ghost of the Blair bill, the aforesaid Scheme has become recognized as a leading propagandist of this movement, however artlessly or artfully such a purpose has sought concealment, and in spite of the fact that the Bureau of Education, which expects to be a large participant in the proposed movement, has hardly demonstrated its ability to meet properly the requirements already made of it. The effect of the Southern Education Scheme and the plan for the Bureau of Education were revealed in the address by Mr. Charles A. Gardiner last June at the annual convocation of the University of the State of New York. This address has been reprinted in full by the regents of the university, and in sending a copy of it to the Manufacturers' Record its author writes:

The issues discussed are unquestionably more pertinent today than they were even last June. Present indications are that they will be made vital issues of both parties in the next presidential campaign. Bills have been introduced this week and others are to be introduced at the next regular session of Congress involving these constitutional and educational questions, and representative bodies in widely-separated parts of the country seem to be united on the solution I suggest as the only feasible and constitutional method of solving the negro problem.

If Mr. Gardiner's conviction on that point has any considerable basis, it is about time for the people of the country to let it be known that these representative bodies, as far as we have noted, consisting of tax-spenders or would-be proteges of philanthropy or government care, and, perhaps, the recent aggrega-

tion of ex-abolitionists, fire-eaters and negroids at Washington which would have a commission on the negro appointed by Congress, do not represent the taxpayers of the country, or persons, whether taxpayers or not, who recognize that education should strengthen rather than weaken, and that the less the government has to do with the schools of the country the better for the country; for, as briefly epitomized by him, Mr. Gardiner's plan is as follows:

First, a uniform educational qualification, to be based on literacy and moral character. For a model of an educational qualification alone I commend the clause that with immaterial variations has been embodied in the constitutions of five Northern and five Southern States. For a model of both literacy and moral character I commend the present constitution of Connecticut. Its suffrage qualifications have been in force many years. They limit suffrage not only to those who can read, but to those "who sustain a good moral character," both qualifications to be determined by the Supervisors of Elections. Second, a statute appropriating funds and providing that the National Bureau of Education shall distribute them throughout the nation by school districts, on the basis of illiteracy as determined by the preceding census. I would endow the Bureau of Education with supervisory powers similar to those of the Board of Regents, so that it can make education compulsory, fix the courses of study and direct instruction into any channel, industrial, intellectual, moral or religious, that the citizenship of any locality may particularly require.

The menace in giving any central body at Washington the power to fix the courses of study and to direct instruction into any channel, "industrial, intellectual, moral or religious," that the citizenship of any locality may particularly require, the Bureau, of course, as the handler of the funds being the ultimate judge of the requirement, is so great that it is almost impossible to conceive that it could have been suggested unless in satire of the whole scheme. Thirty-odd years ago the original promoters of education under national auspices attempted to compel white children to mingle with negroes at school in the South. Some of those promoters still linger on the stage, concealing their animosity against their white brethren in the South under the garb of "philanthropy." It is only necessary to recall their attempt and to appreciate their unrelenting program to recognize at once the dangerous power which this revived movement would create. History is against such a horror. But is history to be taken into account?

Mr. Gardiner seems to cling, in the face of history and in the face of present-day facts bristling at many centers, to the utterly discountenanced proposition that the methods of education which the white race has developed in educating itself to its present condition can in some way or other be applied from the outside to the negroes. He also seems to turn his back upon history in his view of the purposes of the last two amendments to the Constitution, embodied there by methods utterly repugnant to the Constitution itself. Referring to them, he says:

Eight million negroes have been admitted to American citizenship since the amendment was adopted, the majority of them ignorant, vicious, indescribably poor and notoriously unfit for the franchise. Is it conceivable that the nation intended to thus admit the negro wholesale and then permit him to remain a constantly-increasing menace to our civic standards and a haunting disgrace to every republican ideal? A thousand times no!

But the purposes of the amendment was assuredly not completed by a simple fiat. Let the negro vote! Its framers could not have intended to subject the republic to the permanent domination of an ignorant and vicious negro electorate.

When he considers the acts of force



which gave a semblance, but a semblance only, of constitutionality to the adoption of the last two amendments Mr. Gardiner can hardly call them the free-will, representative reflection of any purpose of the nation. Would the amendments ever have been adopted without the assent of States compelled to perform a sovereign act before they were granted sovereign rights?

Again, whatever the actual framers of the amendments may have had in mind, and however they may have been supported through a sincere though mistaken sense of right by some persons, the forces dominating in the campaign for them certainly did not intend to subject the republic to the domination of an ignorant and vicious negro electorate. They thought that such domination would be confined to the prostrate South. They were too vicious-minded themselves to comprehend that such virus could not be injected into any part of the body politic, especially such a vital part as the South, without affecting disastrously the whole nation. They forgot that chickens must come home to roost.

The satire, unconscious perhaps, manifested by Mr. Gardiner with reference to these amendments crops out, too, in the fact that probably two-thirds of the seventy-odd pages of his pamphlet are devoted to a consideration of the constitutional questions and the precedents involved in his plan. He is sufficiently well trained in the law and in knowledge of events to understand that such a petty matter as the Constitution would hardly be taken into account if sufficient might to compel the legislation should exist, and that even were there no unfortunate precedents they might easily be devised and garbed in legality.

The climax of the unconscious satire is reached when Mr. Gardiner writes:

The President of the United States is supremely interested in the negro's welfare, and desires, with a singleness of purpose seldom equaled in our history, the material, mental, moral and religious uplifting of the whole people. In his next annual message, observing the precedents of former Executives, why should he not urge upon Congress the appalling evils of illiteracy and the supreme necessity of national relief?

Supported by such official action of its predecessors, as well as by the imperious demands of the situation, why should not President Roosevelt, with all the force of his great character, urge Congress to enact immediately a uniform educational qualification and to grant ample appropriations for the education of all illiterate citizens?

And Congress, why should it not call a truce to partisanship and sectionalism until it places on the books these non-partisan patriotic measures?

Can it be possible that Mr. Gardiner is unaware of the fact that President Roosevelt's attitude on the negro question has opened the floodgates of the slime of sectionalism and partisanship, which had been closed, it was hoped permanently, by his two immediate predecessors in the White House? Can he not see that such a presidential message as he suggests will be one of the surest means of massing the substantial and conservative citizens of the country against his plan, which depends for its success upon ignorance, illiterate or illiterate, swayed by pedemagogy?

In the meantime the dupes of the Southern Education Scheme must be suffering keenly in a realization of the part which they have been led to play in support of such a plan.

#### A SLICK GAME.

The conventional resolutions purporting to commit the American Federation of Labor to socialism and to political action have been introduced into the annual convention of that body, and have

been voted down as usual. It would never do for the impression to be created that the plan of the American Federation of Labor was socialistic in its intent or that the organization was attempting to participate as such in politics. Such an impression would mean the utter disruption of the Federation. The mass of its members would submit to no such misuse of themselves, and the mass of the American people would drive the leaders in the movement into will-deserved obscurity. So the membership and the American people must be diverted by straw resolutions, and in the meantime the propaganda can be pushed inside and outside the body without interruption. If there is doubt about that, let anyone study the worse than socialistic purpose of the American Federation of Labor's national eight-hour bill and the campaigning methods in politics in behalf of that bill.

#### THE SOUTHERN FARM MAGAZINE.

Intending immigrants to the South will never be satisfied with general statements of conditions there, no matter how full of enthusiasm the statements may be. Settlers want facts about results from farming operations, and realizing that, the Southern Farm Magazine has at every opportunity published letters not so much from natives of the South as from thrifty men from outside who have made a success in Southern farming or on other lines. Quite a number of such letters are published in the December issue of the Magazine as part of a number of articles bearing directly upon the question of immigration.

Other topics treated in the Magazine are the telephone as an ally of the farmer, the use of machinery in agriculture, canning fruits and vegetables, the management of incubators, the plowing under of green crops, the care of farm animals, the effect of soils on tobacco, Southern history and phases of extremes in education. In his December talk with farmers Col. J. B. Killebrew makes a number of valuable, practical suggestions for agriculturists in all parts of the South.

The Southern Farm Magazine is published monthly by the Manufacturers' Record Publishing Co. of Baltimore, Md. Its normal price is \$1 a year, but for a brief period the opportunity is given to new subscribers to obtain it for twenty-five cents a year.

#### WHAT ONE RAILROAD DID.

Figures collated by Mr. G. A. Park, general immigration and industrial agent of the Louisville & Nashville Railroad, show that during the first ten months of the year investments made along the line of the road in Kentucky, Tennessee, Alabama and Florida aggregated \$9,366,300 in eighty-seven industries, and that 805 families of 2563 persons from other parts of the country have been attracted to the four States, purchasing 95,702 acres of farm lands and 255,048 acres of mineral and timber land. The industries established include forty-six woodworking plants, four ice plants, three textile plants, two sugar and syrup plants, three brick and tile plants, three coal mines, four iron and steel plants and twenty-two miscellaneous industries. Woodworking plants lead in number among the industries established, and Alabama has the greatest number of these—twenty-one. The establishment of these plants mark the development of thousands of acres of timber land in the four States, a part of the great movement which is transferring the dominance of the lumber industry more and more to the South. The immigration which is accompanied by an expansion of early market gardening came

from thirty-one States and Territories and three foreign countries, Illinois leading with 887 persons, followed by Wisconsin, Indiana. Other States which sent settlers were New York, New Jersey, Massachusetts, New Hampshire, Connecticut, Nebraska, North Dakota, South Dakota, Washington, California, Colorado, Kansas, Ohio, Pennsylvania, Iowa, Minnesota and Michigan, and Indian and Oklahoma Territories.

#### FEWER RAILROAD CASUALTIES.

There has been a decrease in the number of persons killed in accidents on railroads, according to a bulletin issued by the interstate commerce commission, for the three months ended June 30, 1903. This publication shows that the number of killed in train accidents was 230, or 70 less than the preceding quarter, a decrease of more than 23.33 per cent., and the number of injured was 2629, a decrease of 205, or more than 7.23 per cent. The number of employees killed in coupling and uncoupling was 62, a decrease of 14, or more than 18.42 per cent.

This bulletin also completes the accident statistics for the fiscal year, and while it is noted that the total of persons killed and injured during the twelvemonth are respectively greater than during the preceding year, the increase in casualties is partly explained by the heavy increase in railroad traffic and the employment of a much larger number of men, there being 12 per cent. more in service on June 30, 1903, than on June 30, 1902. It is further explained that fuller reports of accidents have been made by the railroads during the last year than formerly, and it might also be noted that the taking on by railroad companies of a considerable portion of new and more or less inexperienced employees had something to do with the increase of accidents.

It is gratifying to note the decrease of fatalities, and also of less serious accidents to individuals during the last quarter of the year, as it indicates that progress is being made in the direction of securing as nearly as possible perfect safety in the operation of railroads. Railway-operating men have long desired to reduce the ratio of accidents to trains moved to figures approximating those recorded on the railways of Great Britain, but conditions surrounding the operation of railroads in the United States are generally so different from the environment of railways in England that it has been found impossible to secure the greatest amount of safety without making expenditures which would be so great as to throw the companies into bankruptcy. In the more densely populated portions of our country and where the traffic on great trunk lines is heaviest conditions are found similar to those of England, crossings being made either over or under grade and block-signal systems being extensively employed. The accident statistics of such lines, if separated from the mass of figures for all the roads in the country, would doubtless show the existence of a vastly greater degree of safety than on lines in other sections of the United States, where the country has not sufficiently developed to warrant the expenditures of large sums for railroad improvement.

Experience has shown that in every instance in which conditions were found to justify improvements American railroads have, almost without exception, been quicker to adopt them than have the railroads of other countries. Take, for instance, the automatic coupler and the air brake. These inventions have almost entirely displaced the pin-and-link coupler and the hand brakes on freight cars in this country as they displaced them years

ago on the passenger cars. The employment of larger locomotives has also done away to a considerable extent with the more or less dangerous practice of double-heading. Besides, the railroad companies have in other ways increased the safety of operation, and as the years go by there will doubtless be shown a still further decrease in the percentage of accidents, fatal and otherwise, upon our land transportation lines.

#### GOOD DIVIDENDS EARNED.

It is well known that the current year has been lacking in conditions tending to promote profitable operations in the cotton-manufacturing industry. But notwithstanding the rise in the price of cotton, without being followed by a corresponding increase in the price of manufactured products, most of the Southern mills have continued to operate, only comparatively few of them having closed down because of the high price and scarcity of the staple. Those that did cease spinning and weaving took advantage of the temporary necessity to overhaul their machinery and plants and make whatever improvements were demanded by the usual wear and tear in mechanical equipment. Probably some companies will not declare their usual dividends on this year's output, but doubtless they will be limited in number.

Many Southern mills hold their annual meetings about the close of the year, and at this time announcements regarding them begin to appear. The results of four meetings held in Spartanburg, S. C., last week are interesting in this connection. These four companies are controlled by the same interests, comprising the best-known dry goods commission men of the North and capitalists of the North and East. At their meetings the managements submitted reports that showed these mills to be in a most satisfactory and prosperous condition, and although they have been somewhat hampered by the high prices of the staple, are enabled to declare their customary dividends. Two of the companies declared semi-annual dividends of 3 per cent each, and another declared a semi-annual dividend of 5 per cent. The fourth company declared no dividend, as it did not produce any cloth, having been engaged, and is yet engaged, in rebuilding its \$500,000 plant that was razed to the ground by a tornado last spring.

#### MORE LIFE IN IRON MARKET.

Large Interests Taking the Place of Small Buyers at Birmingham.

[Special Cor. Manufacturers' Record.]  
Birmingham, Ala., November 23.

Last week's letter represented rather an active market, and placed the sales at twice the current output of the furnaces. This activity was continued during the past week, and the volume of business was increased. The character of the orders showed very plainly that the more important interests were taking the place of the smaller buyers and putting more life into the market, and that, too, at a season when buying is suspended until after the holidays. The volume of business has been a surprise to those who lay any stress on trade usages.

Prices have been attacked with valor, and you might add without mercy. But they have held up remarkably well, and the week closes with a better tone to the market, and, for the season of the year, an unusually large volume of business. Several large orders were placed, but not at the low prices credited by those to whom the wish is father to the thought. A local buyer went in the market for 500 tons and offered to take it on the basis

of \$9 for No. 2 foundry, and after a trial of two days withdrew the order, convinced that he could not obtain it. Now this order went the rounds of the sellers, and was turned down by all. If any of them had been sellers at \$9 it would have found a resting-place with some one of them. Information was volunteered to one interest that a competitor was offering at twenty-five cents less price, and he could secure the order if he would meet the competition. Upon his refusal to do so he was accorded the order at his price. The buyer was feeling for the bottom, and when he felt satisfied he was there he took the iron.

There are other cases of the same kind that might be cited. The sales register of a large interest covering the first four days of the past week showed no sales below the basis of \$9.50 for No. 2 foundry, and they ranged from that figure up to \$10.05. Nor were they for trifling amounts, either. Some were for 500 tons, some for 700 and 800 tons, and on up to 2000 tons. The question readily propounds itself, could these prices be obtained if the prices quoted by rumor were based on anything but hot air?

The market is more nearly based on \$9.50 for No. 2 foundry than any other price named. There were some sales at \$9.25, but no one will father those sales reported at just even \$9, and some of those who furnished the information that it could be had at that figure took it at the higher figures. Under the conditions that have existed of late in the iron market one must expect to encounter exaggerations. They are the bane of those who hew to the line of pulchritude.

As an instance of the volume of business that has been registered, one of the leading interests states that its registered orders for the first seventeen days of this month run fully to 40,000 tons, and the ratio since then has increased. The others may not make as good a showing, but it clearly indicates the pace at which the buying has been going. As a rule, what is true of one interest applies to the others. There has been during the past week some improvement in the car supply, which has at least temporarily relieved the situation for some. But the relief has not been general, and in quarters not favored by car supply the complaint is yet deep and loud. But the railroads are making every effort to fill in the gap that exists between supply and demand.

During the past week an application was made to the court for the appointment of a receiver to take charge of the furnace at Jenifer, and it was granted by the appointment of J. W. McQueen, the second vice-president of the Sloss-Sheffield Company. The published assets are \$260,000. Their liabilities have not yet been made public, nor is it yet known what brought about the present condition. It is an accepted fact here that the furnace has operated for some time past at a material loss. From the best information obtainable it will not resume operations for an indefinite period.

The foundry plant of the Southern Car & Foundry Co. at Gadsden has been ordered to resume work by the receivers in order to complete a contract for 600 cars taken before the company was placed in the hands of the receivers. It may be continued after this work is concluded.

The Dimmick Pipe Works report a very unusual condition of affairs. At a time of the year when they usually find a scarcity of orders they are staggering under a mountain load of them and covering business for export as well as for the domestic trade in New England and the West. For six-inch pipe their demand is unprecedented, and they have made sales of their four-inch pipe at

\$28.60. Their order-book is now filled (up to 16-inch pipe) as far ahead as February. For the larger sizes the demand is only moderate. The volume of business already registered and in sight will amount to 100,000 tons. The Empire Plow Works at Ensey City have had such a run of business that they have been compelled to increase a capacity they had anticipated would require years to grow to.

At Battelle the Lookout Mountain Iron Co. has completed and has in operation 75 of the battery of 300 coke ovens it is erecting there. As fast as completed and ready for operations others will be added. In the erection of its furnace it is making all the progress possible.

A committee of the directors of the Pittsburgh Coal Co. will arrive here early in the coming month to look over the Corona Coal Co. property which it absorbed some time ago, and gossip says that Henry C. Frick will be among the number to personally investigate the opportunities offered by the district.

We gained one addition the past week to our industries in the advent of a steel-castings plant, which is capitalized at \$25,000, part of the stock being taken by local parties. It will start out under very favorable circumstances, as it will fill a long-felt want.

Negotiations have been on foot for some time with New York parties for the establishment of a street-car-making plant at this point. They are in such shape now that they may be considered as practically concluded. The company is capitalized at \$500,000, all of which is said to be paid up. Contending interests have been seeking their favorable notice for some time, but, barring the unforeseen and the unexpected, Birmingham has secured the plum. It will probably be located at North Birmingham, and will be the means of attracting other industries. Our banks are overflowing with money, which is at the command of enterprises that have merit in them, but it is not obtained for the mere asking. But no case of merit based on solid fact is turned down.

J. M. K.

#### For an Automatic Road Sweeper.

Gavin Jones & Son of Cawnpore, India, write to the Manufacturers' Record as follows:

"We have received an inquiry from one of the municipality here for an automatic road sweeper, and shall esteem it a favor if you would kindly bring this to the notice of any of the firms you advertise in your paper, as these are likely to be a success in India. We would suggest you put one or two firms in correspondence with us regarding the taking up of the sole agency for these road sweepers in India. We are in a position to do so, as we have both offices and go-downs in Calcutta and Cawnpore. We might also add that before any business can be done we should require that one or two machines should be sent here with full particulars as to the working of them. If any firms are inclined to do this we shall be glad to refer them to any of the banks in India, or to our agents, Messrs. Tozer, Kemsley & Fisher, Ltd., Leadenhall Building, London, E. C."

A dispatch from Raleigh says that already this year there have been chartered in the State nineteen cotton mills, with capital stock of \$2,000,000; fifty-one woodworking establishments, with capital stock of \$3,500,000; electric-power undertakings with capital stock of \$5,275,000, and other industrial companies with aggregate capital stock of more than \$5,000,000.

## THE PANAMA CANAL AND AMERICAN COAL.

By F. E. SAWARD.

[Written for the Manufacturers' Record.]

Within the past week cargoes of coal have been sent from Norfolk to Panama, and this opens up the thought of the possibilities of trade in that direction. It means the expansion of territory, and that means the expansion of trade and commerce. Every country which has moved along these lines of expansion of territory has been urged by traders. We have been doing something along that line ever since the days when Governor Spotswood of Virginia led his troop of gallant gentlemen over the Blue Ridge, since the time when George Washington was in the service of "those several persons of Virginia and England associated themselves together in a company" called the Ohio Company to develop 600,000 acres of land about the Ohio river. What else but the possible expansion of trade of the older countries led to the discovery of this same isthmus by Darien and Balboa? What but trade induced the building of the Panama Railroad by Stephens and others? Now in this latter day we are to pierce that isthmus with a waterway for the benefit of the trade and commerce of the United States.

All the discussion about the building of a canal across the Isthmus of Panama has been brought to an end within the current month by the action of the Executive of the United States promptly making a treaty to that effect with the new-fledged republic. This agreement will be fraught with the greatest value to the Southern States of the Union, and is of the most far-reaching importance to that particular portion of our country. It cannot fail to have been noticed by every careful reader of the railroad news during the past year that there has been the most decided tendency on the part of every line which could do so to extend directly or indirectly to some point on the Gulf of Mexico, to have and to hold the outlets there for the advantages which will naturally accrue to every port from the building of the Panama canal. It means business for all the country, beyond a doubt, but to none so greatly does it seem of such importance as to the South. The first needful commodity for the exploitation of any great undertaking in these days is machinery, the material power, and that means fuel.

Fuel for the transportation of men and material to the scene of action; fuel for the actual work of excavation in the largest degree, and in every way there will be business done in coal. It matters not whether it comes from Norfolk, Pensacola, Mobile or New Orleans, there will be coaling stations at either end of this canal so that the vessels of the United States navy and the commercial marine, whether sailing under the domestic or a foreign flag, can secure a supply. It will be carried to these points on a basis of cost probably cheaper, for the grade of fuel, than at any other coaling port in the world. All around the globe it is necessary, proven by our own naval requirements during the last war, to have coaling stations, and many of those in the Western seas not now regarded as our trade could be supplied at low cost with the product of American mines when this canal is completed. It is a most interesting situation which confronts us, and of the greatest moment to many of the industries of the United States, and to none more so than the coal trade.

The present royal commission on coal supply of England now has a representative touring the world to establish the possibilities of a supply for her merchant marine, the opportunities offered for com-

petition, etc., by other countries. This means most decidedly that there is the desire on that side of the world to conserve the home supply, to cease shipping out 50,000,000 tons to all parts of the world annually. This being the case, where can any coal of equally good quality be looked for apart from that mined in the United States? One of the largest operators in the Pittsburgh district, as the result of extended observation during the past season in England and on the Continent, says that there is the great market for American coal; that the most available business just at present is the supplying of steamers in the foreign trade of the countries which he visited with American coal. This feature has so fixed itself upon his work of the future that he has made arrangements for a large tonnage to be furnished at New Orleans, on the price-currents of prominent houses on the other side, making a feature of supplying coal to steamers all around the world, that particular attention is called to the fact that fuel can be had at all times at the Hampton Roads ports and at New Orleans. In some ports of the Eastward it is necessary to give twenty-four hours' notice, and an extra charge for night and Sunday work is made. This foreign trade, either as direct shipments or as "bunker" coal, will be of the greatest advantage to our producers.

Why is it of so great importance to the South and its coal? In no portion of our country has there been so great a development of mineral resources as in those States below the old Mason and Dixon's line. In 1869 the production of bituminous coal was of no great moment, but the following table of its production by tons shows how it has grown:

	1869.	1879.	1902.
United States...	16,206,415	42,713,506	254,738,804
South.....	2,785,565	6,093,693	62,383,142

With outlets at such places as Baltimore, Hampton Roads, Savannah, Pensacola, Mobile and New Orleans, what may not be the growth in the next decade? Well may we take heart of grace and put this end forward for material benefit from this new waterway.

There are three countries which are vitally interested in this new route to the Indies. They are producers of coal to such a degree that the tonnage is of the magnitude of millions in the course of a year. Let us see how they stand, for the coal tonnage produced is an indication of their importance in the commerce of the world. It was Raleigh who said "she that has the ships has the commerce of the world," and that is more true today than in his time; but she that has the coal commands the commerce. The total output in all countries last year was put at 855,173,302 net tons, of which the United States did 295,124,798 tons; Great Britain, 246,942,985 tons, and Germany, 150,742,267 tons.

Here we have the three great nations of the world, whose commerce reaches to all parts of the globe, doing 692,700,000 tons of the grand total. It is this which makes our new enterprise of crossing the isthmus by a waterway of such value to the merchant marine. Coal is needed in every portion of the globe, for steamers have supplanted sailing vessels, to enable this gigantic service to be carried on. The foreign trade in coal from Great Britain reaches 54,000,000 tons a year, not counting the 12,000,000 taken as "bunker" coal by steamers engaged in the foreign trade. Much of this enormous total goes to coaling stations, from Aden to



Montevideo. Germany does nothing in the way of export along these lines, although some attention has been given to the project of having German coal for the navy at certain points, while the United States has not up to the present time done anything very much along this line, for we have had such a demand for fuel at home. Thanks to the enterprise of the bureau of equipment of the United States Navy Department during the past few years, the vessels of our navy wherever found are using American coal. This is an advance along proper lines, and I consider it one of the most creditable acts of this department in many a decade, as it put us on an entirely independent footing. The recent acquisition of Guantanamo as a coaling station gives a strategic position in the Caribbean. The fact that we are entitled to fortify and hold the islands in the Bay of Panama gives us the strength of position at that point no less valuable.

One may fairly state that the action of the President and his Secretary of State in pushing the treaty for the isthmian canal to so quick a conclusion will do more for the development of trade, for the industries of our country, than any public enterprise within the recent history of our country as a nation. It opens up a waterway from one portion to the other. In this it rivals the building and opening of the railroads across the continent, greeted with such applause in 1869. Its value to the commerce of our country will exceed any revenue derived from the purchase of Alaska in 1867, and that has surely proven to be a most excellent bargain. It offers a short route to our island possessions in the Pacific ocean, giving us, if that were needed, a more secure hold thereon, from a commercial standpoint at least. The ultimate destiny of this country to control the trade of that Western ocean, on the Asiatic as well as on the American side thereof, becomes more real, more potent.

As noted, our exports have not amounted to any great figures up to the present time. The "bunker" supply is growing in importance from all the ports along the Atlantic and Gulf. It amounts to 4,000,000 annually. Aside from this, our tonnage of bituminous coal has not been great as a commercial venture, and 1,177,325 tons coal and 311,197 tons coke is the record for nine months of this year to the West Indies, Mexico and South America. That there are possibilities has been noted, and the largest producing company in the world, the Pittsburg Coal Co., doing a business of 30,000,000 tons from Northern mines, finds it to its advantage to take a broad view of affairs for the future, and, arming itself to that end, has acquired property in Alabama to furnish forth the fuel supply of the Gulf without the possible interruption from low water on the Ohio. It is prepared to thus do business on an enormous scale, not only in this country, but in fuel supply at the Gulf, and I am advised that even more elaborate plans are under discussion for the advancement of its traffic to distant points. It may send its cargo boats to the West Indies and to Mexico before next year is out.

As an index to the coal to be had around the world, and the prices, this list has a marked importance and bearing upon the subject of this article. Starting with Aden, we find Bengal or Welsh at \$7.50; at Algiers, Welsh at \$5; at Bahai, the same at \$10; at Bombay, the native coal at \$4.75 and Welsh \$7.25; at Buenos Ayres, Welsh at \$4; at Cape Town, the same at \$11.75; at Constantinople it is \$5.25; at Malta and Messina, \$5; at Moji one gets Japanese at \$3.50; at Montevideo, the Welsh again at \$7.50; at Naga-

saki, Japanese for \$4; at Natal the Indian coal costs \$6; when we get to Pernambuco there is Welsh again at \$10; at Port Said, the Welsh at \$5.50; at Rangoon, the native coal at \$4.75; at Hongkong, Japanese at \$5; at La Plata, Welsh at \$7.50; at Rio de Janeiro, the same at \$8; at Shanghai, Japanese at \$5; at Suez, Welsh for \$6.50. To end the list, Yokohama, we find Japanese at \$5; American coal at San Lucia, W. I., is quoted at \$6.75; at Baltimore bunker coal costs \$3.25; at Charleston, \$6; at Galveston, \$5.40; at Mobile, \$3.50; at New Orleans,

\$3.90; Hampton Roads, \$3.25; at Pensacola, \$3.25, and Port Arthur, \$5.75. With the cost in the United States as shown, there is a most favorable comparison with any port in the world, and the bulk of the supply is the product of mines south of the Potomac. From all that has been said and shown, is not one most assuredly warranted in stating that there is a field for the American coal producer in this outside trade? More and more of it will come to us, and in no surer way than by the expansion of commerce across, through and by the isthmian route.

## THE PANAMA CANAL AND THE SOUTH.

[C. F. Z. Caracristi in Mobile Herald.]

Regardless of the success or failure of the new Panama republic or the authority of the President to deal with Mr. Philippe Bunau Varilla, who, although acting as minister plenipotentiary and envoy extraordinary, is not a citizen of the isthmus, it is now an established fact that the Panama canal will at last be finished by the United States government. We must not forget that the new republic has neither head executive, constitution nor legislative body. President Roosevelt seems to be as familiar with international usage as he is with grammar and geography. In his message the other day he referred to Cuba as "she," and in a part of another message which he caused to be handed to the press he refers to the "United States of Colombia," a country, in fact, that has not existed since 1866. When he baptized the automatic republic of Panama he broke our sacred treaty with the republic of Colombia and gave the democratic party the best campaign issue that has come before the people in years. Mr. Varilla, who drew up the new treaty with Secretary Hay, is unquestionably one of the most distinguished civil engineers of our time, but he is and has been for years the agent of the Panama Canal Co. This is the first time in the history of diplomacy when a promoter, pure and simple, has been allowed to negotiate a treaty for and with two governments for the sole benefit of his company. The only excuse that Mr. Roosevelt will ever be able to offer will probably be that "the end justifies the means"—the end referred to, doubtlessly, meaning his own renomination.

But this international condition and the political reflections and diversions that recent events have caused are of less moment to the South at present than the consideration of the vast commercial possibilities which the construction of the canal will place within our grasp. The great Gulf States are at last to become the gateway through which a modern westward move of empire must forge its way, until wealth heretofore undreamed of shall center in that territory lying between Florida and the Rio Grande. This condition will be the natural sequence of uniting the people of the South and Southwest with the interests of the Pacific slope. Not only will the canal create a divergency of the present channels of trade with foreign countries, in which the Mississippi river will once more play an important role and receive careful government attention and improvement, but there will also follow a great political change through closer personal and business relations between the South and West. By bringing these two wealthy sections together in closer ties of political and industrial accord the South will once more rise to political affluence and power, as well as become the most powerful trade center of America. Many years ago, while the American public were ridiculing the Panama project, I wrote a series of

engineering reviews for the leading journals of the country, including the Manufacturers' Record, in which I predicted that the Panama canal should and would be constructed either by or under the protectorate of the United States, and today, with maturer reflections, I cannot fail to predict that the construction of the trans-isthmian canal will shift the balance of power south and westward to such an extent as to partly wipe out the present political supremacy of the North and East.

And what would be the result of our trade relations that will start simultaneously with the construction of the canal? In the first place, if the canal is constructed by the government, it will cost many more millions than the estimate of the canal commission, or twice as much as it could be constructed for by private enterprise. The government will be fortunate if it completes the great work with an expenditure of \$200,000,000. It can be safely estimated that at least \$60,000,000 will go in machinery and materials that are to come from this country, and it is natural to suppose that much of this material will be bought in the South. We have, for example, in the estimate 15,000,000 barrels of Portland cement, which, based upon price of the German product, which must compete with the American on the Isthmus, will cost \$37,500,000. Unless the United States government in its specifications requires all materials to be of American origin and manufacture, or extends the tariff over the canal strip on the Isthmus to protect the cement from the North, Alabama cement will unquestionably be the cheapest and best in the canal construction. It will be impossible for the Northern mills to deliver this cement at Colon in open competition with either the German or Southern product, owing to high overland freight rates and the difference in the price of labor. And then comes the coal question, in which Alabama is interested. During construction times the annual coal consumption on the Isthmus will be 250,000 tons, and after the canal is completed it will use 2,000,000.

No doubt when the Warrior and Tombigbee rivers are navigable they will give an outlet to both coal and iron products from the Birmingham field for use on the Isthmus. But these are not the only considerations that are of moment to the South. When materials are shipped from these ports to the Isthmus it is scarcely probable the ships will return empty so long as cargo can be found on the Spanish Main and in the Indies. These return cargoes establish with the Gulf ports whether we want it or not. It will be forced upon us, and will result in the beginning of a logical future market.

The possible available tonnage that could have been diverted through the canal from its present route during the past year would have been 5,381,600 tons. In fifteen years it will amount to 15,000,000 tons, or about the same tonnage as is

carried over the sills at Buffalo, N. Y. With the Mississippi as a cheap method of communication with Pittsburg, the Tombigbee and Warrior as outlets to Birmingham, it simply rests with the Gulf ports themselves as to how much of the trade is to be cleared. The ports of New Orleans, Mobile, Pensacola and Galveston are the natural gateways for a future South American and Far Eastern commerce, and these, together with the ports of the Pacific coast, will control it.

The people of Alabama should seriously and vigorously take up the cement industry on a large scale.

### NORTH CAROLINA PINE.

A Forest in Second Growth in Eastern Counties.

Editor Manufacturers' Record:

Before the war this field blossomed like a rose. Today it is a vast forest of pine timber, interspersed with small cotton patches. Those who held it lost their slaves, and, in the main, left the country, and their former laborers gradually scattered over the country, leaving but a comparatively few here to till the soil. The result was that pine took the place of cotton, and the former large plantations are today forests of second-growth pine, tall, straight and thick—so thick that frequently it will cut 10,000 to 12,000 or 15,000 feet of lumber to the acre. The soil is fine, and, properly tilled, yields a bale of cotton to the acre, while no finer tobacco is produced on earth than grows on these lands, underlain with dense clays and sapolites which admit of heavy and successful fertilization.

The neglected condition of the country renders lands cheap, while the standing timber is to be bought at from \$1 to \$1.25 per acre stumpage, estimated by timber experts hired for the purpose, and who, in the nature of things, do not overestimate. Ransom's Bridge, where I now am, is near the corner of Nash, Franklin, Halifax and Warren counties, North Carolina. It is twenty miles to Louisville, twenty-three miles from Littleton, both upon the line of the Seaboard Air Line, while Nashville, upon the Atlantic Coast Line Railroad, is distant eighteen miles.

Were there a railroad here the pine timber upon the lands would bring the prices up from the present of from \$5 to \$10 per acre to \$20 or \$40 for the timber alone, while the land would proportionately increase in value. Railway surveys have been made through the section, while for the past two or three years two lumber concerns have been buying an occasional tract of timber, and they propose to run tramways in from the main lines to remove what they have bought, but as their deeds usually allow from ten to fifteen years for removal of the larger timber only, a wonderful opportunity is open for a broad-gauge road to tap and redeem this fertile field.

Were the lands held in large boundaries and the facts of the amount and value of the timber known, promoters would invade the field and make known existing opportunities. But as the holdings range from 50 to 2000 or 3000 acres and lie remote from a railroad, the two companies above referred to are practically the only buyers of pine timber. In addition to the second-growth pine, considerable original-growth timber is encountered, but it is, as is the other, neglected. Tar river, Great Fishing creek and other streams traverse the section and furnish ample and cheap transportation of the timber to the coast.

The growth of the young pine is wonderful, as within the period named some of it has reached a diameter of thirty to forty inches, and it is rapidly increasing in size. The naturally increasing demand



for lumber and its rapid growth assure to a purchaser large profits in holding, while active operators will scarcely find a field to equal it. HENRY V. MAXWELL.  
Ransom's Bridge, N. C.

### The Pig-Iron Market.

Matthew Addy & Co., Cincinnati, under date of November 21, write:

"Southern pig-iron monopolizes the situation at the present time. There is a demand for it so great that were there no stocks on hand it would not be possible to ship as fast as iron is wanted. But there are stocks on furnace yards. These, to tell the truth, are the main cause of the trouble, for their accumulation assisted materially in breaking prices. But these troublesome furnace stocks are being rapidly decreased. And after all, the supply on hand at the furnaces is not quite enough to keep the country going for a week. This does not even give a decent margin for safety. If in any other great commercial commodity there was such a meager reserve there would be almost a panic on the part of consumers. The process of furnace restriction is going on rapidly, and since the 1st of July there has been a steady decline in output. Of late this reduction in production has been phenomenal. There is no question but that by the end of the year, even allowing for a heavy decline in consumption, the country will be making less iron than it is actually using.

"The week that has just passed has shown quite a different kind of business than that which has been the rule for so long. Since the heavy buying movement began it has been made up mainly of small lots. Even the large consumers have been buying only little lots. Some of these heavy consumers have been purchasing every few days, and everything was bought for quick shipment. This kind of buying showed, of course, an absolute lack of faith in the market. No one was willing to take the chance of loading up on high-priced iron. During the week, however, some large concerns have placed round-lot orders ranging from 5000 up to 12,000 tons, and for deliveries as far ahead as the furnaces were willing to ship. At the present time there are on the market three or four very decidedly large inquiries, which doubtless will be closed up in the next few days. Of course, the furnaces, on their part, are not willing to make long deliveries. They do not wish their order-books filled with a lot of low-priced business when the tide turns. Some of them are only selling for shipment over the balance of this year. Others are willing to sell for ninety days ahead, and as a rule it is impossible to obtain any deliveries into next year beyond the end of February.

"In spite of the fact that Northern iron is considerably above the price of Southern iron, there has been quite a demand for it, and some very fair transactions have taken place.

"In regard to prices there is still some irregularity, but it is safe to say that every ton of iron that is now being sold is being sold either without a cent of profit or at an absolute loss."

Nearly 50,000 bales of cotton were taken in two cargoes last week from New Orleans for Europe. The American steamship *Mississippi* and the English steamship *Irishman* sailed on the same day, the former with 10,106 round bales and 19,355 square bales of cotton, 5138 pieces of staves, 4441 sacks of cottonseed meal, 400 tons of cottonseed cake and 3669 pieces of cottonwood lumber, and the latter with 25,000 square bales of cotton, 250 barrels of flour, 4480 sacks of cottonseed cake and 11,900 pieces of oak plank.

## RAILROADS.

[A complete record of all new railroad building in the South will be found in the Construction Department.]

### B. & O. IMPROVEMENTS.

**President Cowen's Policy Now Reaping Its Fruits in Improved Earnings.**

The extensive improvements in progress for several years on the old main line of the Baltimore & Ohio Railroad between Relay and Washington Junction will probably all be completed and the line in use by May 1 next, provided that weather conditions during the winter are not too unfavorable. The most important piece of work on the line, the reduction of the grade at Mt. Airy, was finished about a month ago, but the changes at Union Dam and Ilchester are still under way, with the prospect that they will be completed next spring.

These great improvements constitute part of the physical rehabilitation of the Baltimore & Ohio Railroad planned under the direction of Mr. John K. Cowen when he was president of the company. After Messrs. Cowen and Murray were appointed receivers they found the property very much run down, and pursuant to a thorough investigation of its condition, Mr. Cowen as the executive head of the road immediately set about making it a low-grade line from the Northwest to tidewater. The improvements to the main line west of the Relay were started, and other improvements on the Pittsburg division in Pennsylvania and on the main line in West Virginia were designed, it being apparent to the president that to operate the road with the greatest economy and profit it was imperatively necessary to increase the train tonnage, and with keen foresight he aimed to cut down difficult grades lying between Baltimore and the great freight-producing district of Pittsburg, and also to increase the capacity of locomotives and cars to operate trains of a magnitude greater than would have been possible even with the old equipment over the reconstructed line.

The policy of progress and growth adopted under Mr. Cowen's administration has been and is being carried out, and the work is being completed as rapidly as all conditions will permit. The extensive benefits resulting from the broad-gauge methods adopted by him are displayed in the annual report but lately submitted to the stockholders, in which the gross earnings of the system are shown to have been more than \$63,000,000 for the fiscal year ended June 30, 1903, or several million dollars more than twice the amount of the combined gross earnings of the Baltimore & Ohio proper and the Baltimore & Ohio Southwestern ten years ago. Besides, the cost of operating has been reduced from 72.63 per cent. of gross earnings to 67.03 per cent., and this notwithstanding heavy expenditures for maintenance of way and structures and for the maintenance of equipment.

But the improvements to the Baltimore & Ohio are not confined to the lines east of Pittsburg, for a most important piece of work is under way between Newcastle Junction, Pa., and Akron, Ohio. This will make a considerably better route between Pittsburg and Chicago by reducing grades and introducing double track. Farther west, between Chicago Junction and Nova, the grade is also being cut down and second track put in.

The improvement of the Locust Point terminal, also part of the general plan for increasing the facilities of the Baltimore & Ohio, has been started. Much has already been done in the way of increasing

yard room, and now a spacious export and import pier 850 feet long and 160 feet wide, besides being two stories high, is under construction. The provision of this pier will enable much more work to be done in the way of improvement, because it will provide facilities for taking care of current business while changes are in progress. A considerable amount of land has been bought by the railroad company at Locust Point, and all its improvement work there will not be completed for some years.

The new Washington terminal is still another great work undertaken by the Baltimore & Ohio for which the plans were started under Mr. Cowen's direction. This will involve the expenditure by the Baltimore & Ohio of \$5,700,000, while the Pennsylvania will have to spend nearly an equal amount. The balance of \$3,000,000 to complete the cost of providing the new terminal is appropriated by the government.

When all these works are finished the Baltimore & Ohio will have a low-grade, double-track freight line all the way from Baltimore to Pittsburg, with double track also for a large portion of the way between Pittsburg and Chicago, where the grades are even more advantageous; large freight and passenger terminals at Locust Point, and with entrance to a magnificent union terminal station at Washington, all the crossings in that city being above grade.

This review of some of the important features of the improvement work on the Baltimore & Ohio Railroad would not be complete without allusion to the valuable terminal changes at Pittsburg and to improvements at other points on the system, where conditions have been altered at considerable expense to the advantage of both the public and the company.

### I. C. TO BIRMINGHAM.

**Alleged Plan to Use Connections via Bolivar, Tenn., and New Albany, Miss.**

The Illinois Central Railroad will, it is reported, eventually secure entrance to Birmingham, Ala., over the line of the Mobile, Jackson & Kansas City Railroad from Bolivar, Tenn., to New Albany, Miss., and thence over the 'Frisco. The Mobile, Jackson & Kansas City, which, it is reported, is controlled by interests in harmony with the Illinois Central, proposes to build an extension from Middleton, Tenn., to Bolivar, and this will furnish the necessary link to make a continuous line from Bolivar to Birmingham.

Some time ago it was reported that the Illinois Central would build from a point near Jackson, Tenn., along the Tennessee river to Sheffield, Ala., and thence southeast via Double Springs to Birmingham, although connection could immediately be made upon reaching Double Springs through a detached piece of line owned by the Illinois Central from Double Springs to Winfield, on the 'Frisco. Surveys were made, and it was supposed that the plan would eventually be carried out. It now appears to be abandoned. The alleged arrangement with the Mobile, Jackson & Kansas City would provide a line that could be more quickly utilized on account of the small amount of construction necessary, while it would also give a much longer haul to the 'Frisco.

### Flint River & Gulf Railway.

Mr. C. A. Alford, lumber manufacturer at Willingham, Ga., and also president of the Flint River & Gulf Railway, writes the *Manufacturers' Record* concerning progress in building the line. He says: "We have done but little work on our railroad, having begun only a few weeks ago. We have about thirteen miles

graded between Ashburn and Sylvester (work done in the summer) and about four miles graded south of Sylvester, with two miles of track laid. We expect to complete grading and laying five or more miles of track south of Sylvester by December 31. We hope to complete the road from Ashburn to Carlisle on the Georgia Northern Railroad, a distance of about thirty-two miles, during next year."

Ashburn, the starting point of the Flint River & Gulf Railway, is on the Georgia Southern & Florida Railway, and Sylvester is on the Atlantic Coast Line. The general direction of the line is southwest, and the plan, as announced at the time of its incorporation, is to continue from Carlisle southwest to Camilla and thence in the same direction to Bainbridge. All the construction now under way lies in Worth county. To extend the road to Bainbridge would involve the building of nearly fifty more miles of line.

### ST. LOUIS TO MEXICO.

**Gould Lines Reported to Have a Contract With the National Railroad.**

A dispatch from Austin, Texas, reports that Leroy Trice, second vice-president and general manager of the International & Great Northern Railroad, has made the announcement that a contract has been concluded between the Gould lines and the National Railroad of Mexico, which has recently been converted to a standard-gauge road, for an interchange of traffic at Laredo. This will include both freight and passenger service.

It is further stated that a passenger service will be established between St. Louis and the City of Mexico over the St. Louis, Iron Mountain & Southern and the International & Great Northern railroads and the National Railroad of Mexico as soon as the yellow fever quarantine restrictions are removed from San Antonio and Laredo and points in Mexico. It is expected that this arrangement will result in a great increase of traffic to Mexico via Laredo.

### Northeast Texas Railway.

Mr. V. E. Buron, secretary of the Northeast Texas Railway Co., writes from Redwater, Texas, to the *Manufacturers' Record* describing the work done by the company as follows:

"The Northeast Texas Railway extends from Redwater, Texas, south two and one-half miles. We have a spur running from the end of the line to Spencer's mill about ten and one-half miles, making a total trackage of thirteen miles. As soon as we have moved the lumber we have at Spencer's mill, which will be in about thirty days, we will draw up the spur and put on the main line of the road, which is ready to take care of this ten and one-half miles of steel.

"Our objective point is Cusseta, Texas, about twenty-three miles. The line is going into a vegetable country, and we expect this year to ship considerable potatoes from this territory. The main object of the line at present is for lumber interests.

"The officers are G. Munz, president; J. E. Kirby, auditor; V. E. Buron, secretary and general freight agent, and T. D. Singleton, chief engineer."

### Imboden & Odell Railroad.

The Blue Creek Coal & Land Co. of Charleston, W. Va., which proposes to build the Imboden & Odell Railroad, writes the *Manufacturers' Record* as follows:

"We have purchased considerably more than 11,000 acres of coal land along Blue creek, and are just now preparing to construct the first ten miles of a railroad to



open up this tract. Of course, our principal product will be coal. In addition to that, we will open up a considerable amount of good lumber. We shall undoubtedly need railway equipment at a little later date, and at the present time we would be very glad to hear from the trade with regard to the furnishing of a portable saw-mill of about twenty-five horse-power."

The officers of the company are Edward S. Jones, president; W. A. MacCorkle, vice-president and general counsel; Thos. E. Jones, treasurer, and W. D. Boyer, secretary.

#### May Extend to Coal Mines.

Advices from Nashville, Tenn., quote C. M. Henley of Columbus, Ohio, president of the McMinnville, Woodbury & Nashville Railway, as saying that the line may be extended beyond McMinnville to the McCorkle-Barnes coal banks and to other coal fields. It is further reported that the company expects to begin construction of the road at an early date. Among those interested are H. H. Ziegler and W. M. Gamble of Columbus, Ohio, and W. H. Bellis of Indianapolis, Ind. The Ellis Construction Co. of Chicago will, it is reported, build the line, which may use steam or electricity for motive power, and possibly both.

#### May Build a Big Extension.

The Cane Belt Railroad of Texas, recently rumored as having been purchased by the Missouri, Kansas & Texas Railway, is now said to have been bought by the Atchison, Topeka & Santa Fe Railway. The line, which extends from Sealy to Matagorda, Texas, ninety miles, will, it is reported, be extended along the Gulf coast 800 miles to a connection with the Mexican Great Eastern Railroad in Mexico, which runs southeast from the City of Mexico and is to reach the Gulf of Mexico at Coatzacoalcas, about 100 miles south of Vera Cruz.

#### Reported Deal.

It is reported from Pensacola, Fla., that the Pensacola, Alabama & Tennessee Railroad, a standard-gauge line thirty-one miles long running from Pensacola northwest to Muscogee, Fla., has been purchased by the promoters of the Memphis & Gulf Railroad, which is now surveying for a line between Grenada, Miss., via Meridian to Pensacola. H. McLaughlin is president of the Pensacola, Alabama & Tennessee, with office at Pensacola, and Chester H. Pond of Morehead, Miss., is president of the Memphis & Gulf.

#### New Line for Mexico.

David Moffat and other capitalists of Denver will, it is reported, build a railroad from Douglas, Ariz., through the mining district of Cananea, Mexico, and down the Yaqui river to Topolobampo, on the western coast of Mexico. It will also be extended further and up the Gualajajara valley. At Topolobampo it will connect with the Kansas City, Mexico & Orient Railway that is being built by Arthur E. Stilwell and others. The proposed new road would be about 1500 miles long.

#### Railroad Notes.

C. H. Davis of Manatee county, Florida, and formerly of Townsend, Ga., has, it is reported, secured a contract for supplying the Seaboard Air Line south of Savannah with ties.

Mr. L. Burns, Jr., of Vicksburg, Miss., writes the Manufacturers' Record confirming the report that he and others are trying to promote the building of a railroad from St. Joseph, La., northwest to

Monroe or Rayville, La., a distance of fifty to sixty-five miles.

It is reported from Nashville, Tenn., that a company is being organized there with \$25,000 to operate automobiles for passenger service. The plans, it is stated, include a mail line to Chapel Hill, forty miles away, and a bus service to various points of interest. Among those interested are Frank G. Fite and W. F. Anderson.

Considerable work in the line of railway improvements is reported in the vicinity of Birmingham, Ala. Construction of the Southern Railway's new yards at North Birmingham is being pushed, and the Louisville & Nashville Railroad has on hand much work, including extensive yard improvements at Boyles. The Alabama Great Southern is doing considerable work in ballasting its line and in track renewals.

T. Jefferson Coolidge, Jr., president of the Old Colony Trust Co. of Boston, and H. M. Atkinson of Atlanta, Ga., are reported to have purchased the Tifton, Thomasville & Gulf Railway, extending from Tifton, Ga., south to Thomasville, Ga., a distance of fifty-five miles. The line is now operated by the Atlantic & Birmingham, and, according to advices from Thomasville, the deal means that the two lines will be merged.

The Little Rock Northern Railroad Co. has been granted a charter in Arkansas, according to advices from Little Rock. This, it is stated, is to keep alive a charter which was granted several years ago, and which would expire in about a month. Those interested are Andrew Johnson of New York, Charles P. Coleman and H. S. Calloway of Philadelphia, W. W. Dickinson, John M. Rose and H. M. Armistead of Little Rock. The proposed line is from Little Rock to Springfield, Mo., 280 miles.

Joe Miller's Complete Jest Book. A complete collection of the wittiest sayings, the most brilliant jests and the subtlest repartee in the English language. Publisher, William T. Henderson, New York. Price \$1.25.

As everybody knows, a joke has to be only about two years old to be fresh. The original jokers of the world rest under the deeply-buried ruins of Assyria and Babylonia or have been preserved among the Egyptian mummies. Minstrel troupes, the Congressional Record and other publications of wit and humor have tried to perpetuate these jokes of prehistoric days, but none of them has been as successful as was John Mottley, who in 1739 collected and published, under the title of Joe Miller's Jest Book, 1546 jests, anecdotes, etc., which had come down to his day from all corners of the globe. The earlier editions of Joe Miller's Jest Book were quickly exhausted, and the copies have in large measure been literally thumbed out of existence by statesmen, orators and editors. At the same time the number of jokes in circulation has been vastly reduced, largely through the rise and development of the so-called humorous column in American daily newspapers—a column devoted principally to a cultivation and an illustration of the advantages of reciprocity in literary effort. The recent organization of newspaper humorists and poets seems to threaten to give the fatal blow to humor, and consequently has justified a new edition of Joe Miller. This has been issued unabridged, with an introduction by Andrew G. Dickinson, Jr., and a classified index enabling one to find a joke on any particular line without any trouble. This bit of practical philanthropy ought to be practically appreciated in a wide circulation of the new book.

## TEXTILES.

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the Manufacturers' Record. We shall be glad to have such matter at all times, and also to have any general discussion relating to cotton matters.

#### SUGGESTIONS TO SPINNERS.

##### Some Pointers on the Price Situation in Cotton.

Messrs. Daniel J. Sully & Co., bankers and brokers, of New York, in reviewing the cotton outlook, take a very bullish position as to prices. In their letter of November 14 they say:

"A contributor to the Liverpool Journal of Commerce of October 23 sounds an alarming note of warning to the English spinner which we most earnestly urge the American spinner to heed, not only as applying to the present, but the future of the cotton industry in the United States, otherwise he will most assuredly find himself changing places with his cousin across the water, who, having been grossly misled for the past several years by the Bustons, Neals and others of like class, has annually sustained heavy losses, which culminated at the close of last season and the opening of this, with conditions exceptionally and exceedingly burdensome. Not to be caught again, the foreigners are absorbing the bulk of the new crop at the lowest prices, while the American sits idly by, hoping against hope that lower prices will prevail, blindly ignoring a fact patent to all careful observers of the present situation that the Southern planter, not the speculator, fortified by the high prices received last year, aware of his strength this, is alone responsible for the present high level of spots, and will most certainly sustain it to the end. The contributor referred to says:

"Whatever the new America crop may be in extent, it is, humanly speaking, safe to say it will not be more than sufficient to replenish exhausted stocks and yield the world's demand until another season brings its successor. \* \* \* All indications apparent, and we may say for years past, point to the fact that for some cause the productive nature of the cotton-growing States in America is no longer vigorous. \* \* \* It requires no great foresight to realize what will happen during the next decade to the cotton-growing industry of Great Britain unless the most strenuous efforts to increase new and independent supply are made."

"The writer of the above is undoubtedly correct in his conclusions with regard to the demand for every available bale of American cotton of this season's growth, irrespective of the ultimate yield, and also as to the disastrous effect upon the cotton industry, not only of Great Britain, but of the world, during the next decade, unless Southern plantations can be made more productive or new countries are discovered where the staple can be successfully grown."

"It is with a hope of throwing light upon contributor's perplexity with regard to the mysteriousness of the non-productiveness of the cotton belt we have the temerity to assert that the following extract from the annual report of President George A. Morrison of the American Cotton Oil Co., published November 12, solves the mystery:

"The decrease in surplus earnings of the American Cotton Oil Co. is attributed to extreme competition for cottonseed and the seed proving to be of poor quality, pro-

ducing oil of inferior grade and less than normal quantities to the ton."

"Giving due consideration to unfavorable climatic conditions, variable seasons, soil deterioration, Mexican boll-weevil and all other enemies of the plant, are we not, upon the plain statement of such an eminent authority as President Morrison, confronted with indisputable evidence that the rapid expansion of the cottonseed-oil industry, with its attendant extreme competition for seed, both as to quality and quantity, and the well-known practice of the average cotton-grower in disposing of his best seed, reserving the inferior for planting, has, beyond a reasonable doubt, caused a sterilized seed, which, in turn, has manifested itself in a less hardy and vigorous plant, bearing a shorter staple of less tensile strength, generally showing 10 to 15 per cent. less in producing power than obtained before the days of the oil mill, and altogether contributing to a limit in the yield in the aggregate, regardless of the acreage?"

"We have repeatedly prophesied the crisis with which the cotton world is now brought face to face. We see no immediate relief, and, with the normal increase in the world's population, the staple an universal utility expanding in usage in every direction and encroaching upon the domain of all rival fibers, consumption outstripping production, predict that cotton will inevitably bring higher prices than for years. We predicted the shortage last year; we are certain of a greater shortage this."

"In conclusion, again we say to the American spinner, take heed, secure American cotton for American manufacture and at once, if you would not place the foreigner in a position to undersell you in all countries, including our own, not only this year, but the next and the next."

#### COTTON GOODS FOR INDIA.

##### Some Practical Suggestions for Southern Spinners.

United States Vice-Consul Ervin Edward Osgood at Calcutta, India, writes to the Manufacturers' Record as follows:

"In a recent editorial in the New York Sun you are mentioned as being best posted on the industries of the South, and I therefore write for some information which I would like to obtain for some native merchants in Calcutta. There is an enormous business done here in piece goods, but it is almost entirely in the hands of the English and Germans."

"Some American cotton goods find their way through English commission houses, but there has been no active attempt on the part of our American factories to get hold of this business, at least so far as I have been able to ascertain."

"I have been asked by several wealthy native merchants whether the goods which they now buy in Europe could not be purchased in the United States."

"These merchants are willing to guarantee a certain volume of business if prices and goods are satisfactory, and as the piece-goods business last year amounted to over \$30,000,000, you can realize the importance of getting a share of it. It has occurred to me that with the rapid industrial development of the South and the numerous textile factories that have recently sprung up in the cotton belt there would be a good opportunity for some of them to cater for this Indian trade."

"I am prepared to obtain samples and give the prices which are now obtained for such goods in this market, and as I plan to return to New York in the spring, I shall be able to attend to the business myself and to guarantee finances and the standing of merchants here."

"If you know of any factories which would be interested in investigating the possibilities of this market, I should be glad to have you place me in communication with them with a view to securing a share of the lucrative business in cotton goods that can be done in this market."

### Big Power and Mill Enterprise.

Last week mention was made of the Lily Mill & Power Co. of Shelby, N. C., which incorporated in October and subsequently organized for the purpose of developing water-powers and building a cotton factory. The Manufacturers' Record is now able to announce further particulars regarding the enterprise. The company will develop one of its water-powers known as Stice's Shoals, located five and one-half miles from Shelby. This is the lower shoal, and about 500 horse-power will be obtained and transmitted by electricity to the upper shoals, three miles distant, and from there on to Shelby for factory, lighting and railway purposes in that city and vicinity. This electrical-transmission plant will be built so as to permit of attaching a 600 horse-power generator at the upper shoals in the future and to carry about 1100 horse-power to Shelby. The cotton mill is to be operated by the first power developed. Its textile equipment will be 5000 spindles for manufacturing Nos. 40 to 400 combed yarns from Sea Island and Egyptian staple. The exact location of this mill has not been determined. It may be built at the upper or the lower shoals, at Shelby or at some other point on the line of transmission. About \$100,000 will be the cost of the mill, but the amount required for the other expenditures has not been finally determined. Probably several hundred thousand dollars in all will be invested. The company is now soliciting bids on the textile machinery, and will be ready soon for bids on the electrical equipment. It is likely that the contractor for the textile machinery will also have charge of the engineering work. John F. Schenck of Lawndale, N. C., is president of the Lily Mill & Power Co., and W. E. Morton is general manager.

### Annual Meeting Held.

Messrs. Seth M. Milliken, S. D. Brewster and C. E. Perkins of New York, R. K. Waring of Baltimore, N. W. Ryce of Boston and R. Campbell of Maine attended the annual meetings of four cotton-mill companies at Spartanburg, S. C., last week, in which enterprises they are interested. The companies are: Spartan Mills of Spartanburg, Lockhart Mills of Lockhart, Whitney Manufacturing Co. of Whitney, each in South Carolina, and Gainesville Cotton Mills at Gainesville, Ga. The directors and officers were re-elected. The usual semi-annual dividends of 3 per cent. for Whitney, 3 per cent. for Lockhart and 5 per cent. for Spartan were declared, all payable January 1. Gainesville Mill will be re-membered as almost destroyed by a tornado last spring, and the management of this plant reported rebuilding progressing rapidly enough to warrant the conclusion that operations can be resumed next April. It has been stated previously that 35,000 spindles and 1000 looms will be the equipment for manufacturing print cloths. Whitney, Lockhart and Spartan mills have a total of more than 120,000 spindles and about 4000 looms, their capitalization being \$1,924,000.

### Enlargements Costing \$70,000.

Important improvements are announced for the Rosemary Manufacturing Co.'s plant at Roanoke Rapids, N. C. This company has been operating 12,000 spindles and 400 looms on

the production of fancy cotton goods, and finds the demand for its product necessitates an increased output. Contracts have been awarded for new buildings and machinery to cost from \$60,000 to \$70,000, and the construction work is now in progress. A two-story structure 93x100 feet in size is being added to the main building, and in this will be installed 2500 spindles and complement of carding machinery, although there will be space for 8500 spindles and complement. A weave shed formerly occupied by silk machinery will be equipped with fifty broad looms to weave fancy cotton. Fred S. Hines of Boston, Mass., is the engineer in charge of the improvements, and Messrs. William A. Chapman & Co. of Providence, R. I., are the contractors. John L. Patterson is manager of the Rosemary Manufacturing Co.

### Cartersville's \$500,000 Mill.

Work is progressing rapidly on the buildings for the cotton mill announced some months ago as to be built at Cartersville, Ga., by the E. L. McClain Manufacturing Co. of Greenfield, Ohio. This latter company has been succeeded by the American Pad & Textile Co. The Cartersville branch will have an equipment of 25,000 spindles and 375 looms, installed in the main building three stories high, 130x320 feet, for manufacturing cloth used in making pads for horses. There will also be buildings for power plant, warehouses, operatives' cottages, etc. Forty cottages are now in course of erection, each different in design. Macadamized streets, good pavements, water supply, sewerage system and lighting facilities will be provided. The American Company also intends to operate a branch of one of its departments in Cartersville, but will not manufacture collar pads there. About \$500,000 is being invested. E. L. McClain is president.

### A \$15,000 Knitting Plant.

Reference was made last month to the incorporation of the Harriman Knitting Mills of Harriman, Tenn., by Messrs. A. H. Wood, W. S. Wood and associates. Permanent organization has since been effected, A. H. Wood being president, and W. S. Wood, manager. A main building, 40x210 feet, also a 25x40-foot building to be equipped for bleaching, has been secured, and machinery is now being installed. There will be ten knitting machines to start with, manufacturing ladies' light-weight underwear, with a daily production of from 200 to 250 dozen garments. The company is capitalized at \$25,000, the plant as outlined to represent an expenditure of about \$15,000. Production will begin in December.

### For Combed Sea Island Yarns.

In its issue of October 8 the Manufacturers' Record announced the decision of the Atlantic and Gulf Mills, Quitman, Ga., to double its yarn plant of 5000 spindles. The company has now engaged Messrs. Lockwood, Greene & Co. of Boston, Mass., as engineers in charge of the improvements, and by December 1 will have closed contracts for the new machinery. About \$15,000 will be expended for the new mill building. Product will be combed Sea Island yarns. Capital stock was increased from \$100,000 to \$200,000 to provide the necessary funds for the improvements.

### A Cotton Estimate.

Messrs. Latham, Alexander & Co., New York, have issued their annual estimate of the cotton crop, which they put at 10,300,000 bales. Last year at the same time they estimated the crop at 11,000,

000, which was nearly 300,000 bales more than the final outturn proved it to be. It would be a misfortune should their estimate this year prove to be too large, since the world needs very badly a crop of at least 11,000,000 bales, and the time is rapidly coming when much larger yields than that will be essential.

### Texas Wool Sales.

Dispatches from San Angelo, Texas, state that approximately 1,000,000 pounds of that market's wools have changed ownership, the buyers being representatives of New York and Boston houses.

Some of the wool was held over from last spring, but the bulk of sales was of fall fleeces. Prices on the latter ranged from ten to twelve cents, while twelve-months sold at fifteen to sixteen cents.

Six hundred thousand pounds of Kerrville (Texas) wools are also reported sold.

### The Cotton Movement.

In his report for November 20 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during the eighty-one days of the present season was 4,296,652 bales, a decrease under the same period last year of 240,262 bales; exports were 2,222,712 bales, an increase of 74,191; takings by Northern spinners 459,076 bales, a decrease of 128,981; by Southern spinners 521,062 bales, a decrease of 22,488 bales.

### Textile Notes.

Efforts are being made to establish a \$200,000 cotton factory at Pine Bluff, Ark. Messrs. W. H. Langford, Charles Weil, J. W. Scales, J. B. Ezell and others are interested.

New York capitalists contemplate locating a knitting mill at Columbus, Miss., and their representative will visit Columbus at an early date to investigate advantages for the industry.

Williamston (S. C.) Mills has declared a semi-annual dividend of 3 per cent. This company is now building an addition to have 11,000 spindles and 200 looms; original equipment, 10,752 spindles and 300 looms.

Dublin (Ga.) Cotton Mills will install additional reeling machinery and twenty looms, and will then have 180 looms in all. There are 5000 ring spindles operated. It is reported that contract has been awarded for the machinery.

Williamsburg (Va.) Knitting Mills Co., recently reported as increasing capital from \$50,000 to \$80,000 to buy new machinery, will install additional carding and spinning equipment. It has twenty-five machines knitting fleece-lined underwear.

Reports state that the Drexel Spinning Co. has been organized to build the cotton mill previously mentioned as proposed at Drexel, N. C. R. B. Mull is said to be president, and J. S. Abernathy, treasurer. Nos. 30 to 60 will probably be the product.

Bessemer City (N. C.) Cotton Mills will install additional looms, and, it is reported, the new machinery has already been purchased. This company has a plant of 9200 spindles and 214 looms, manufacturing colored dress goods and shirtings.

Pickens (S. C.) Hosiery Mills, reported organized, etc., last month, has not decided all details regarding its plant. A hosiery knitting and dyeing equipment will be installed, and the capital to be invested is \$40,000. Roland L. Lee is president.

Girard (Ala.) Cotton Mills will build an addition and install twenty more looms for manufacturing cotton plaids. Construction work has begun and the ma-

chinery has been purchased. The company's present equipment is 6000 spindles and 238 looms.

Prince Edward Knitting Co. of Farmville, Va., will make improvements to its knitting mill of thirty machines for manufacturing hosiery. The betterments will include a dyeing department. It is understood that new interests have secured control of the enterprise.

The rumor, mentioned last week, that the Brogan Cotton Mills of Anderson, S. C., will increase capital stock from \$500,000 to \$1,000,000 was true. The company will not, however, make any improvements to its plant because of the increase, and only \$100,000 will be issued at present.

Clover (S. C.) Cotton Manufacturing Co. will install 3000 spindles and other additional machinery, contract for same having already been awarded. This installation will fill the company's present buildings and give a total of about 16,000 spindles. Cottages for the additional operatives needed will be built.

Cleveland Cotton Mills of Lawndale, N. C., has amended its charter, changing title to the Lawndale Railway & Industrial Co. and reducing capital stock from \$100,000 to \$60,000. This company operates a plant of 6600 spindles, water-power and steam plant and a local short-line railway. H. F. Schenck is president.

Gem Knitting Mills Co., Barnesville, Ga., will add a bleachery to its plant. A three-story building 40x60 feet in size will be erected to hold the necessary equipment. Some knitting machines will also be added. This company recently reorganized. It manufactures half-hose and men's underwear, having sixty-nine machines at present.

No new building is required for the additional machinery mentioned last week as being installed in the woolen manufacturing department of the Eagle and Phoenix Mills at Columbus, Ga. The new equipment includes one set of woolen cards, 672 woolen spindles and sixteen woolen looms, increasing the nine-set equipment to ten-set. The company will also expend about \$15,000 for additional machinery to be installed in the carding, picking and spinning departments of No. 3 mill.

Woodruff (S. C.) Cotton Mills expects to begin operations in its additional mill by January 1. About \$250,000 has been expended for the buildings, other improvements and the machinery. The latter includes 16,500 spindles and 438 looms for manufacturing shade goods and print cloths, and about 225 additional operatives will be required. The first announcements of this enlargement in the Manufacturers' Record, early this year, gave 16,500 spindles and 388 looms as to be added.

Hartsville (S. C.) Cotton Mills held its annual stockholders' meeting last week and re-elected officers, including C. C. Twitty, president. The company found its addition likely to be ready for installation of machinery by January 1. In July last the Manufacturers' Record gave particulars regarding the improvements. Briefly, the company has doubled its \$250,000 capital and is to add 23,000 spindles, with 750 looms, making a total equipment of 35,000 spindles and complement. It will require two or three months to install the new machinery in the four-story 130x141-foot building now approaching completion.

Upon the first marked rise in neighboring waters nineteen towboats with 225 barges and 125 coal boats laden with more than 5,000,000 bushels of coal left Pittsburg one day last week for the South.



**MECHANICAL.****Plant for Manufacturing Hollow Cement Stone.**

Builders and contractors interested in new building stones will note the accompanying illustrations of stone in process of manufacture by Messrs. K. Dykema & Son, 21 Fountain street, Grand Rapids, Mich. This firm manufactures the Dykema mold for hollow cement stone, and

tiele is equal or superior to brick or wood.

The quality of cement as a building material need not be discussed. It is rapidly being accepted as one of the leading building materials of the day.

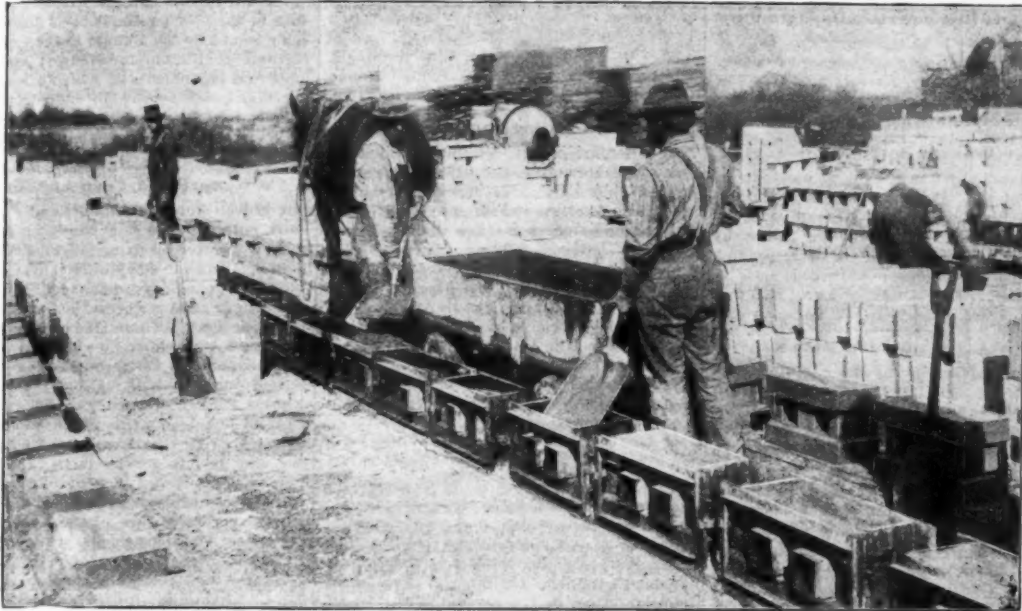
It is claimed that the Dykema mold makes hollow cement stone, of concrete composed of crushed stone or gravel made wet, of great strength and in such shape the mason has a convenient hold, permitting the immediate placing of the stone in its permanent position, and that the

operation of large power plants, but now the ever-increasing competition and the necessity of lowering the cost of production demand the very closest scrutiny into every possible source of economy. With the introduction of electricity and the consequent installation of large central power stations, and in large manufacturing establishments where the cost of power is an important item in cost of the product, a very careful record should be kept of the performance of the boiler plant, and there

itself from the balance of the plant.

This separation is important, indicating as it does the efficiency of the boilers. It shows when the boiler is affected by scale or soot and determines the most economical fuel, as well as the most economical stokers.

In the past the customary method of determining the amount of boiler-feed water has been by weighing or measuring it. This is a very laborious method, even for short tests, and is utterly impracticable for daily work. The use of the feed-water



MANUFACTURING DYKEMA HOLLOW CONCRETE STONE.

have sufficient confidence in the device they are placing on the market to be active users of it themselves. In fact, their representative states that the profit obtainable in manufacturing and selling these stones in Grand Rapids and vicinity makes the business very desirable.

Operating a plant, using a concrete mixer, and having a capacity of 500 stones per day, more work has been obtainable than could be handled.

In developing the Dykema mold the Messrs. Dykema aimed to produce a de-

Dykema stone can be made and laid in a wall 12-inch and 16-inch sizes at less than one-half the cost of brick and in the 8-inch and 10-inch sizes at less than wood.

Further details can be obtained by direct correspondence with Messrs. Dykema & Son.

**Hot-Water Meter for Boiler Evaporative Tests.**

By JOHN A. DREW.

Every engineer who has control of a boiler plant must feel the necessity of

are but few, if any, plants today that do not keep a close record of the coal consumption. But while this is valuable information in itself, it is only part of the

meter, on account of its simplicity, accuracy and reliability in evaporative tests, is now universally adopted by engineers for daily work, as well as for trial tests.

The most reliable test meters are of the positive displacement type, the best known of which is the duplex pattern, measuring water by means of two chambers alternately filled and emptied by the motion of their pistons. These meters are so constructed that it is impossible to pass water without a corresponding registration, for in order to pass through the meter the water must be displaced by the motion of the pistons, and therefore recorded by the counter attachment. The pistons are

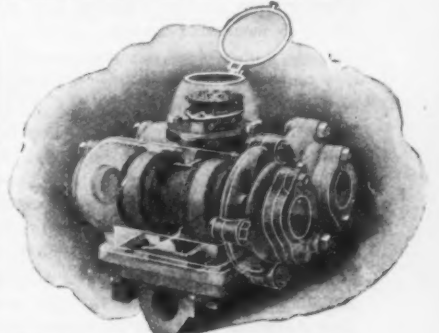


FIG. 1—HOT-WATER METER FOR BOILER EVAPORATIVE TESTS.

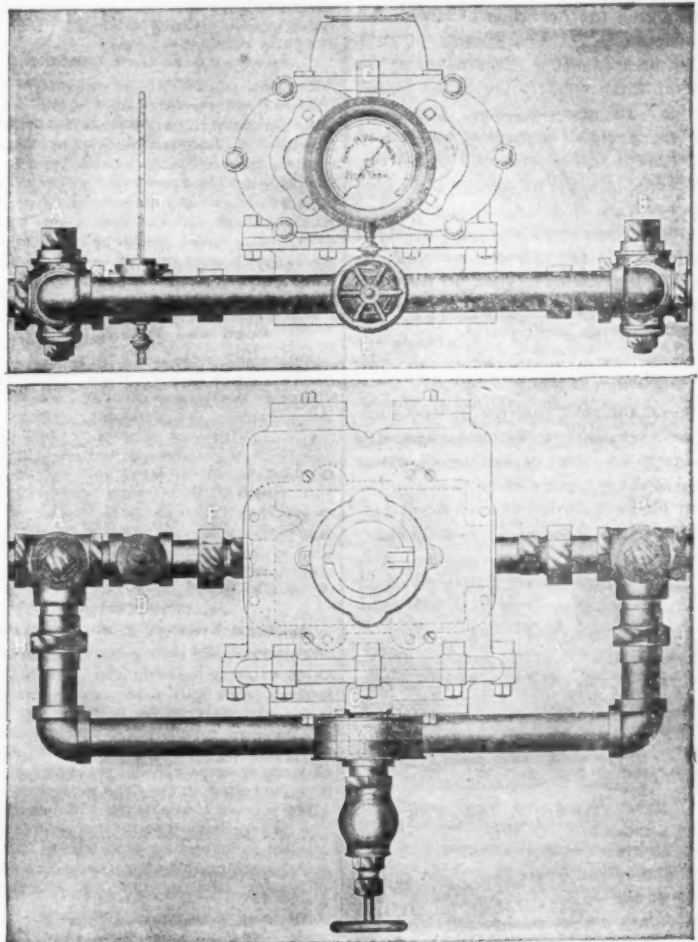


FIG. 2—HOT-WATER METER FOR BOILER EVAPORATIVE TESTS.

data that should be obtained. If the amount of water that is evaporated is not known, there is no way of separating the performance of the boiler

closely fitted and move in parallel lines. The design, arrangement and construction of valves and parts is such that the strokes of the two pistons alternate, the



LAYING DYKEMA HOLLOW CONCRETE STONE.

vice with which a cement building material could be made to meet competition with brick and wood.

To build up a business in any line it is necessary to first have a field to work in. It is apparent that a material that can be produced at a cost low enough to be placed on the market at a price less than brick or wood has a market. This is, of course, on condition that the quality of the ar-

having some simple device by which the amount of water fed to the boiler can be accurately measured. With such an appliance at hand it becomes an easy matter to test the evaporative values of various coals with a view to determining which of the several is the most economical in developing power.

There was a time when it was not necessary to keep a close record of the cost of

valves actuated by one admitting pressure to the other. At the end of each motion the pistons are brought to rest by adjustable buffers which determine the length of the stroke. One of the pistons is constantly in motion, giving uniform flow of water, free from pulsation or shock. The meters are perfectly noiseless in their performance. These test meters are designed and constructed of materials uniformly affected by expansion and contraction in passing water of varied degrees of temperature, thus further assuring their accuracy as measuring devices.

For an ordinary test one of these meters was calibrated. By deducting the weight of water as found by the meter registration from the actual tank weight the figures showed the meter to be correct to within one-fifth of 1 per cent. This is considered a very satisfactory showing for ordinary every-day work. To obtain correct results these test meters should be properly applied for operation, the size selected should be ample for the service, insuring slow piston speed, and pipe connections should be made so that at any time the meter can be cut out for examination or repairs without shutting down the boilers.

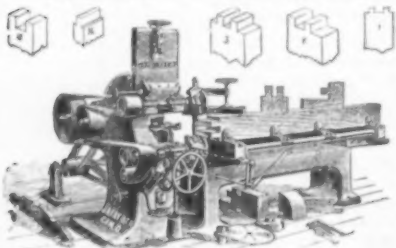
The accompanying illustration, loaned by Henry R. Worthington of New York, shows the plan and elevation of a test meter, with its pipes and connections, as applied to boilers for test or for every-day record.

A and B are three-way cocks to pass water through the meter and to the boiler, or, for calibration, to allow water to pass by the angle valve E to a tank placed on scales for weighing. By this arrangement it is possible to test the meter as frequently as desired. By setting the cocks A and B and breaking the couplings F and C the meter may be removed without interrupting the operation of the boiler plant in any way. C is a gauge for indicating pressure, D is a thermometer for indicating the temperature of the water, H and J are pipe couplings. These connections should all be made of brass.

By this it will be observed that a correct record of boiler efficiency can be kept with accuracy by the use of a test meter. In fact, in these times, when the saving of fuel is looked for in every direction, its use is indispensable to good management and economic operation of moderate size as well as large boiler plants.

#### New Car-Shop Tenoner.

One of the most powerful tenoning machines ever built is illustrated herewith. Owing to its range of work and amount and kind of same it will do, the manufacturer places it on the market firmly convinced that it is one of the best machines



NEW CAR-SHOP TENONER.

ever introduced to do the work required by car-builders and where heavy and general work is desired.

Here are a few reasons why this machine should prove successful, as given by the manufacturer:

1. It will do single, double or triple tenoning, and also cut off and gain, to the very best advantage, and by adjusting the gaining heads in different ways will over and under gain and cut on any portion of the timber desired.

2. By removing the lower cutterhead and substituting a circular saw heavy cutting off can be readily done. The upper and lower tenoning heads have knives that will tenon up to six inches in one operation, or by repassing the material tenons of any length can be cut very easily. The upper head can be adjusted to make one tenon longer than another.

3. The carriage is self-acting, and can be made to travel in either direction or instantly stopped by pressure of a lever. On heavy work power feed is preferable, while on short the carriage X can be disengaged and operated by hand.

The J. A. Fay & Egan Co., 270 West Front street, Cincinnati, Ohio, is the manufacturer.

## INDUSTRIAL NEWS OF INTEREST.

#### Rockwell Engineering Departments.

The Rockwell Engineering Co. has removed its engineering and executive departments to the factory, Jersey City, N. J. The sales offices will be, as formerly, at 26 Cortlandt street, New York city.

#### Capital Wanted for Manufacturing.

A manufacturer in the South wants to increase his capital for the purpose of installing a folding-box plant or some other equipment, and has a suitable building in healthy community. He is desirous of corresponding with some one likely to invest in such an enterprise. Address Box, care the Manufacturers' Record, and letters will be forwarded.

#### New Stove for Iron Furnace.

A fifth stove is being added to the quartette of stoves at the Seales furnace of the Lafollette Coal, Iron & Railway Co., Lafollette, Tenn. The furnace was built and placed in operation about two years ago. Its new stove, 90x18 feet, together with appurtenant piping, connections and fittings, is being built by the William B. Pollock Co., Youngstown, Ohio, steel-plate construction builders. H. M. Lafollette is general manager of the Seales furnace.

#### Wants Engine Agents.

Steam engines are in great demand throughout the entire country. Their importance in the power and manufacturing world makes the demand for them one of the steadiest of any. One of the best-known engine builders in the West is desirous of obtaining agents in different parts of the United States to handle its product. The Brown Corliss Engine Co. of Corliss, Wis., is the builder in question. This company's product ranks high in the engine world.

#### Another Standard Contract.

Southern municipalities evidently appreciate the expert services and modern installations for lighting purposes of the Standard Electric Co., Norfolk, Va., as that company receives many city and town contracts. The company has just secured the award to build a plant for arc and commercial circuits at Scotland Neck, N. C. This plant will be driven by a Corliss engine built by the Hard-Tynes Manufacturing Co. of Birmingham, Ala., and the generator to be used will be of Westinghouse manufacture.

#### Corn and Wheat Mills.

One of the old-established grain mills of Virginia is now on the market. This plant is known as the Orange Mills, and is a modern and complete establishment, rebuilt and equipped with new machinery during the past year. Its capacity is 100 barrels of flour, 600 bushels of cornmeal and ten tons of chop. Because of personal differences the owners find it advisable to dispose of this mill property, and will offer it at public auction on December 8. Parties requiring further details can address Borton & Lyne, Orange, Va.

#### Modern Lumber Plant Offered.

A disagreement among stockholders makes an opportunity in the lumber-manufacturing industry that will doubtless be promptly taken advantage of by buyers. The plant has just been completed. It includes modern machinery for making lumber, shingles and all kinds of cooperage and veneer work. The plant is located on the Cape Fear river, with Atlantic Coast Line side-track in the grounds. The owners state that the mill should readily yield annual profits of \$18,000. Full particulars regarding this offer can be obtained by addressing Bargain, Box 152, Wilmington, N. C.

#### Cargo of Pyrites Ore.

Manufacturers who can make use of pyrites ore or dealers in such material will have an opportunity December 11 to bid on a cargo of pyrites. This lot was recently imported from Antwerp. It comprises 4165 tons of 2000 pounds each total, of which about 578 tons is large unbroken lump ore, 2747 tons is furnace size, 353 tons is pebble size and 487 tons is fine ore. It is stated that

analysis shows 1.50 per cent. moisture and 46.40 per cent. sulphur. The sale will be conducted at the Seaboard Air Line terminals, Savannah, Ga., for the Virginia-Carolina Chemical Co.; main offices at Richmond, Va.

#### Marble and Lithographic Stone Lands.

In Botetourt county, Virginia, are located some valuable marble and lithographic stone lands. They have large deposits of marble of different colors, and on specimens of the lithographic stone some fine work has been executed. Good building stone is also found, together with water-power sufficient to work the quarries. The Fincastle Stone & Lumber Co. is the owner of the lands mentioned. A commissioners' sale of the properties will be held at Fincastle, Va., on December 14 to the highest bidder. Information can be obtained by addressing Special Commissioners, Messrs. W. B. Simmons and C. M. Lunford.

#### Rivets.

Rivets comprise a class of manufactured articles in great demand. This demand has increased wonderfully during recent years, more especially since structural metal work has been so generally used in erecting all kinds of buildings. Contractors and builders find that there is a difference in rivets, and because of the character of work into which the rivet enters, it is the best policy to use only the best possible product. The rivets made by the Hoopes & Townsend Co. of Philadelphia are used in enormous quantities because of their uniform excellence. They are made in solid dies, No. 9 by 1/4 inch to 1 1/2 by 42 inches. "A word to the wise is sufficient."

#### Removal to New Location.

The American Steam Gauge & Valve Manufacturing Co. has again been compelled to seek new quarters, owing to increase of business, and is at present removing the entire plant and offices from Bismarck street, Roxbury district, to the large brick building 295-220 Camden street, Boston, Mass. These new buildings have floor space of 85,000 square feet. The Mowry & Phillips foundry department will also be removed from South Boston and every branch of the business consolidated at the Camden-street factory. The new plant will afford more than double the previous capacity, and will be employed in producing the American Company's well-known valves, gauges and indicators. Special metals and foundry work will be made in the Mowry & Phillips department.

#### Many Metal and Roofing Contracts.

Manufacturers building plants in the South, as well as those who are improving established enterprises, are usually careful to select only the best materials to make their buildings of the most modern character. Many contracts for metal and roofing work are being placed at this time, and the Charlotte Roof & Paving Co. of Charlotte, N. C., is obtaining a large share of the orders. This company's metal and roofing departments have enough work on hand to keep them busily occupied until next March at their present capacity. The company has roofed the warehouse and finished the Hoskins Cotton Mills building, also finished the copper cornice, asphalt roofing and steel ceiling work on the Southern Bell Telephone Co.'s new building, both at Charlotte. It is about to begin the gravel roofing, concrete flooring and sheet-metal work for the Highland Park Manufacturing Co. and Mecklenburg Cotton Mills at Charlotte, N. C., and has contracts for roofing the Bloomfield Manufacturing Co.'s plant at Statesville, N. C., and the Revolution Cotton Mills' plant at Greensboro, N. C.

#### Forced-Draft Apparatus.

Considerations which have led to the use of the fan for forced draft, when stated briefly, are: Coal saved, low grades of fuel burned, widely employed in the anthracite coal districts, smoke prevented by a proper mixture of hard and soft coal or screenings, simplicity of installation, initial cost far less than a chimney, cost of maintenance low, easily applied to old boilers at a mini-

mum initial expense, steaming capacity of boilers advanced to a maximum, flexible, positive, instantaneous, meets promptly sudden demands for steam, constant boiler pressure provided by automatically controlling speed of fan engine or motor, an indispensable adjunct of mechanical stokers, an essential for the proper combustion of sawdust, bagasse, spent tanbark and like fuels, efficiency greatly in advance of natural draft, economizes space, not affected by atmospheric conditions or temperature of gases, ensures highest possible furnace efficiency, ensures highest possible efficiency of economizers. Industrial operators who are interested in this subject will find valuable data in the new pocket book of information being issued by the Buffalo Forge Co., manufacturer of Buffalo forced-draft apparatus, numerous equipments of which are now giving high-grade service in industrial establishments. The company solicits requests for its literature. Address main offices, Buffalo, N. Y.

#### New Portland Cement Works.

It is well known that Portland cement is daily entering into new kinds of construction work, for erecting various kinds of buildings and for many other kinds of work. Portland cement is demanded in greater quantities as the use of the material becomes more general. There is consequently a growing market for cement, and a complete modern plant to assist in meeting the conditions has been built at Iola, Kan., by the Kansas Portland Cement Co. This company has an establishment of large capacity, equipped with the latest improved machinery and devices for producing the highest grades of Portland cement. It will have the services of some of the best-known and most experienced men of the cement industry. Geo. E. Nicholson is president; A. B. Cockerill, vice-president; L. L. Northrup, treasurer, and George Welsbrod, secretary. E. C. Champion (for several years chief chemist of the Iola Portland Cement Co.) has accepted the position of superintendent and chief chemist with the new company. F. L. Wood (formerly with the Iola Company, but late of Ann Arbor (Mich.) University) is assistant superintendent. B. E. Allison (for many years in charge of Missouri Pacific interests at Iola) is general sales agent and traffic manager. Their experience will be of the greatest assistance to the Kansas Portland Cement Co. in introducing and readily marketing its product to the best advantage. Buyers of Portland cement when they are in the market will find it to their advantage to obtain estimates from the new company.

#### The New Worthington Plant.

An extensive pump-manufacturing plant, said to be the largest in this country, and probably in the world, is now under construction at Harrison, N. J. It is to be occupied by the firm of Henry R. Worthington, which employs about 3000 men in the present works at South Brooklyn, L. I., and Elizabethport, N. J. The new plant at Harrison will accommodate from 4000 to 5000 men, and cost about \$2,000,000. It consists of main machine shop with slide galleries over 1000 feet long, erecting shop 592 feet long and of same section as machine shop, and high erecting shop 210 feet long and four galleries in height in the side bays connecting the two shops. Main foundry is 600 feet long. There is also a special foundry for small work 410 feet long, with a building 200x60 feet in size for cleaning castings connecting the two. Pattern building is four stories high, 550 feet long, and is divided by fire walls into four sections. The north section will be used for offices and drafting rooms; adjoining section for pattern shop, and balance of structure for pattern storage. Power-house 102x172 feet will be equipped with the most modern boilers, engines and generators. Electric-power distribution is to be employed throughout, and the grounds will be illuminated by electric arc lights. There are many other buildings, which will be used for packing, storing and shipping goods, etc., all so arranged that additions can be built when the work demands it. All will be connected by a complete system of railroad tracks entering the ends of the buildings and placing the works in direct communication with the Delaware, Lackawanna & Western, the Erie and the Pennsylvania systems. The new plant will be devoted entirely to the manufacture of water-works machinery, water meters, cooling towers, condensers, feed-water heaters, centrifugal pumps and steam pumps of all kinds.

#### Manufacturing Saws in the South.

Just five miles from the heart of Atlanta, Ga., stands a group of modern factory buildings destined to be a lasting memento to the

[Continued on Page 371.]



# CONSTRUCTION DEPARTMENT.

## TO OUR READERS!

In order to understand and follow up properly the Construction Department items, please bear in mind the following statements:

### EXPLANATORY.

The Manufacturers' Record seeks to verify every item reported in its Construction Department by a full investigation and complete correspondence with everyone interested. But it is often impossible to do this before the item must be printed, or else lose its value as news. In such cases the statements are always made as "rumored" or "reported," and not as positive items of news. If our readers will note these points they will see the necessity of the discrimination, and they will avoid accepting as a certainty matters that we explicitly state are "reports" or "rumors" only. We are always glad to have our attention called to any errors that may occur.

\*Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

In correspondence relating to matters reported in this paper, it will be of advantage to all concerned if it is stated that the information was gained from the Manufacturers' Record.

### ADDRESS FULLY.

To insure prompt delivery of communications about items reported in these columns, the name of one or more incorporators of a newly incorporated enterprise should be shown on the letter addressed to that town, or to the town of the individual sought, as may be shown in the item, as sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. This will help to insure prompt delivery of your communication, although it is inevitable that some failures on the part of the postal authorities to deliver mail to new concerns will occur.

### WRITE DIRECTLY.

It is suggested to advertisers and readers that in communicating with individuals and firms reported in these columns a letter written specifically about the matter reported is likely to receive quicker and surer attention than a mere circular.

## ALABAMA.

Abbeville—Axe-handle Factory.—S. P. Bradley is installing machinery for making axe handles.

Abbeville—Grist and Shingle Mill.—Saunders & Chambers are erecting grist and shingle mill.

Albertville—Stave Mill, etc.—Company will be organized for establishing stave, saw and planing mill. Address John L. Ray.\*

Anniston—Real Estate.—Anniston Realty Co. has been incorporated, with B. C. Blackwell, president, and Rutherford Lapsley, secretary, for development and improvement of real estate.

Anniston—Stove Foundry.—Hugo Graf of Belleville, Ill.; J. B. Ehrlick, Indianapolis, Ind.; C. W. Foushee, Lexington, Ky.; O. W. Snyder, Lexington, Ky., and Ross Blackmon of Anniston have organized \$50,000 company for establishment of stove foundry in Anniston.

Birmingham—Street-car Plant.—It is reported that efforts are being made to organize \$500,000 stock company to erect street-car plant at Birmingham.

Florence—Fertilizer Factory.—Tennessee Valley Fertilizer Co. has increased capital to \$100,000.

Gadsden—Saw-mill.—Beggs Lumber Co. has removed saw-mill from Ball Play to Gadsden.

Girard—Cotton Mill.—Girard Cotton Mills is building an addition, and will add twenty looms. The machinery has been purchased.

Warrior—Water-works.—Construction of municipal system of water-works is contemplated. Address The Mayor.

## ARKANSAS.

Bearden—Coal Mines, Oil Wells, etc.—Freeo (not Freed, as lately reported) Oil & Coal Co. has been incorporated, with capital of \$100,000, and will begin development of coal and oil properties. J. O. Higginbotham is engineer in charge.\*

Benton—Electric Plant and Ice Factory.—Company has been organized, with capital of \$5000, for installing electric-light plant and ice plant. E. Y. Stinson is president; John G. Steel, vice-president, and W. C. Caldwell, secretary-treasurer.

Bentonville—Ice and Cold-storage Plant.—Bentonville Ice & Cold Storage Co. has changed name to Bentonville Cold Storage & Milling Co. and increased capital to \$50,000. D. W. Peel, J. C. Knott, E. S. Wilks, I. B. Lawton and others are interested.

Fayetteville—Furniture Company.—Chartered: Nesbit-McMillan Furniture Co., with capital of \$18,000, by W. T. Nesbit, D. F. McMillan, W. F. Buck and O. L. McMillan.

Fort Smith—Development Company.—Sengal Development Co. has been incorporated, with capital of \$100,000, and George Sengel, president; Edward Sengel, vice-president, and George Sengel, Jr., secretary.

Huntington—Electric-light Plant.—Fort Smith Electric Co. will rebuild electric-light plant burned at loss of \$12,000.

Little Rock—Brewery.—Aubuser-Busch Brewing Association is having plans made by G. Morgner for improvements to its property, involving an expenditure of \$75,000.

Little Rock—Granite Company.—Twen Cen Granite Co. has been incorporated, with capital of \$100,000, by L. Bertram Cady, William Hamilton, Albert H. Lea and Otis W. Krum.

Montgomery County—Slate Quarries.—Consolidated Slate & Manufacturing Co. of Arizona will develop slate quarries in Montgomery county. Address M. O. Waterbury, Mena, Ark.

Pine Bluff—Cotton Mill.—Efforts are being made to establish a \$200,000 cotton mill. W. H. Langford, Charles Well, J. W. Seales and others are interested.

Pine Bluff—Ice Factory.—Consumers' Ice & Coal Co., reported several months ago as incorporated, has awarded contract for installation of 250-ton plant.

Pine Bluff—Candy Factory.—Bluff City Candy Factory has been incorporated, with capital of \$25,000, by W. S. Jeter, J. F. Gillespie, V. O. Alexander, A. W. Nunn and others.

## FLORIDA.

Apopka—Saw-mill.—Consumers' Lumber & Veneer Co. will remove machinery from Forest City to mills in Apopka and Mofitt, increasing capacity of these plants; building is now being erected at Apopka, two stories, 32x100 feet.

Clearwater Harbor—Water-works.—J. N. McClung has, it is reported, franchise for construction of system of water-works reported lately.

De Soto County—Timber Lands.—M. M. Smith has purchased 65,000 acres of timber land in De Soto county from Winn-Ashley Land Co. of Valdosta, Ga., and will develop same by installation of turpentine stills, etc.

Hastings—Crate Factory.—S. D. Jordan will establish crate and barrel factory.

Jacksonville—Box Factory, etc.—Cummer Lumber Co., previously reported to erect box factory, has plant in course of construction; main building will be two stories, 60x125 feet; capacity 3000 boxes per day; new docks will also be constructed.

Jacksonville—Docks.—St. John's River Terminal Co. has commenced construction of its proposed docks along the river front to increase facilities for handling freight.

Jacksonville—Shipyard.—A. G. and W. E. Cummer of Jacksonville and H. W. Cook of Philadelphia, Pa., have, it is reported, organized the Southern Shipbuilding Co. to establish plant for manufacture of ships, etc. Mr. Cook will be general manager.

Jacksonville—Naval-stores Company.—Operators' Tank & Warehouse Co., previously reported as being organized, will be incorporated, with capital stock of \$500,000, to build storage tanks for turpentine, rosin yards, warehouses, etc., and conduct general naval-stores business in all its forms, and has effected temporary organization with W. J. Hillman, president; Raymond Cay, vice-president; James A. Holloman, secretary, and H. A. McEachern, treasurer. P. L. Sutherland, J. W. Callahan, J. B. Padgett and others are also interested.

Ocala—Mercantile.—A. Brown & Bro. Co. has been incorporated, with capital of \$75,000, for conducting grocery business, establishing warehouses and operating steamship line, by L. L. Meggs, Munroe Bros. & McDonald, J. B. Martin and others.

Miami—Fruit and Vegetable Association.—Chartered: Osceola Fruit and Vegetable Growers' Association, with capital of \$10,000, by M. A. Marshall, F. W. Mason, C. R. Campbell and others.

Miami—Dredging.—P. Sanford Ross of Jersey City, N. J., is lowest bidder (\$267,970) for dredging in Biscayne bay, Miami, and will probably get contract.

Moffitt—Saw-mill.—See item under Apopka.

Pensacola—Real Estate.—John McDavid, Henry Hyer and others have incorporated the McDavid-Hyer Company, with capital of \$25,000, for dealing in and improving real estate, etc.

Tampa—Ice Factory.—Florida Brewing Co. will double capacity of its ice factory.

## GEORGIA.

Abbeville—Shingle Mill.—R. E. Stubbs, previously reported to install equipment for manufacture of shingles, has, with F. L. Stubbs, R. E. Stubbs and others, incorporated the Stubbs Shingle Co., with authorized capital of \$10,000.

Atlanta—Gold Mines.—Franklin Gold Mining Co. has been organized, with capital stock of \$150,000, and privilege of increasing to \$2,500,000, by Howard M. Hooper and John M. Patterson of Pennsylvania, H. N. Randolph and E. T. Brown of Atlanta, for development of gold properties. It is reported that this company is a reorganization of the old Creighton Mining Co. in Cherokee county, which has been in litigation.

Augusta—Lumber Plant.—Youngblood Lumber Co. has changed hands, and will be reorganized as the Industrial Lumber Co., with Jas. P. Armstrong, president, and C. B. Hayes, secretary-manager.

Augusta—Basket and Box Factory.—C. F. Pinckney, F. M. Storer, C. W. Springer, A. H. Hamaker and others of Strasburg, Va., will establish box and basket factory at Augusta.

Barnesville—Knitting Mill.—Gem Knitting Mills Co. will erect three-story brick building 40x60 feet, to be equipped for bleaching; will also add knitting machines. Construction has begun.

Cartersville—Cotton Mill.—American Pad & Textile Co. is successor to the E. L. McClain Manufacturing Co. of Greenfield, Ohio, previously reported as to build a 25,000-spindle and 375-loom cotton factory at Cartersville. The buildings are being erected, and will be completed soon. About \$500,000 to be invested.

Columbus—Hardware Company.—Wm. Bench Hardware Co. has been incorporated, with capital of \$25,000, by W. B. Beach, W. A. Crow, O. C. Bullock and others.

Columbus—Cotton and Woolen Mill.—Eagle & Phenix Mills has completed installation of additional machinery for its woolen department, referred to last week. The company will also add about \$15,000 worth of picking, carding and spinning machinery in No. 3 mill. Bids for the new equipment have been submitted.

Dublin—Cotton Mill.—Dublin Cotton Mills will add twenty looms and other machinery. It is reported contract has been awarded for the machinery.

Marietta—Mercantile.—Chartered: Anderson Bros. Co., with capital of \$30,000, by J. T. Anderson and others.

Millen—Publishing.—Millen Publishing Co. has obtained charter and will install complete new outfit for publication purposes.

Moultrie—Syrup Mill.—E. S. Nace, proprietor of the Moultrie Cotton Oil Mills, will erect steam syrup mill with capacity of forty barrels of syrup per day.

Quitman—Cotton Mill.—Atlantic & Gulf Mills, reported in October as to increase capital by \$100,000 and double plant, will erect building to cost \$15,000. About 5000 spindles will be the machinery, and contracts for same are about closed; Lockwood, Greene & Co. of Boston, Mass., engineers in charge.

Rome—Mercantile.—Chartered: Rome Book Store Co., with capital of \$25,000, by J. Sam Veal and Edward C. Hume.

Savannah—Lumber Mill.—John W. Dickey of Augusta, Ga., has purchased an interest in the Mill Haven Co., manufacturer of lumber.

Savannah—Subways.—Atlantic Coast Line, Savannah Electric Co. and the city of Savannah will expend \$45,000 in construction of subways.

Savannah—Road Improvement.—Chatham

county will expend at once \$25,000 in resurfacing Wyly avenue and the old White Bluff shell road; later on will expend \$12,000 to pave Lathrop avenue with gravel. Address County Clerk.

Vining Station—Bridge.—Cotton States Bridge Co. of Atlanta, Ga., has contract at \$3260 for construction of proposed steel bridge across Chattahoochee river near Vining Station.

Winder—Electric-light Plant.—City has awarded contract at \$12,000 for erection of its electric plant previously reported; A. A. Camp, mayor.

## KENTUCKY.

Artemus—Coal Mines.—G. Anetee, B. V. Wells and Mrs. Lindsay, all of Norton, Va., have purchased and will operate coal mines at Artemus.

Hopkins County—Coal Mines.—Caney Creek Coal Co., recently chartered at Nashville, Tenn., with capital of \$50,000, and C. W. Weaver, W. W. Weaver, R. H. Huddleston and others, will begin at once development of fifty acres of coal lands in Hopkins county.

Hopkinsville—Telephone System.—E. B. Tyler, representing the Ideal Construction Co. of Lima, Ohio, and reported recently as having been granted franchise for installation of telephone system in Hopkinsville, has, with A. W. Hoge and Gustav Hirsch, incorporated the Hopkinsville Home Telephone Co., with capital of \$100,000.

Mt. Vernon—Brick and Lime Kiln.—Winchester (Ky.) parties will, it is reported, erect \$30,000 brick and lime kiln at Cooks Siding.

Nebo—Coal Mines.—Mineral & Mining Land Co., at the head of which is John C. Davidson of Louisville, Ky., and which recently acquired large tracts of coal lands near Nebo, is preparing for extensive development of same.

Owingsville—Telephone System.—The East Tennessee Company has purchased the Owingsville telephone system from J. H. Powell of Richmond, and will organize new company for operating the system.

Salersville—Coal Mines, etc.—It is reported that a Pennsylvania company with capital stock of \$1,500,000, and Charles Cecilian of Pittsburg, Pa., president, and W. L. Chisholm, secretary-treasurer, has purchased and will develop 20,000 acres of timber and coal lands in Magoffin county; coal-mining plant will be installed at cost of \$100,000, chair, stave and handle factory erected and other improvements made.

Williamsburg—Coal Mines.—Cumberland-Jellico Coal Co. has increased capital from \$6000 to \$10,000.

## LOUISIANA.

Homer—Lumber Mill.—Plant reported recently to be built by J. T. De Loach for manufacture of all kinds of lumber will be operated as the Homer Lumber & Manufacturing Co., Limited, with capital of \$10,000; main building will be 50x70 feet.\*

Jennings—Oil Wells.—Great Western Oil Corporation is being organized, with capital stock of \$350,000, for extensive developments of oil properties in Louisiana. George Hathaway will be president, and H. L. Shultz, secretary-treasurer.

Lake Charles—Sewerage, Street Improvements, etc.—City will vote on issue of \$125,000 of bonds for sewerage system (previously reported), \$10,000 for fire station and equipment and \$65,000 for street improvements. Address The Mayor.

Monroe—Timberland Development.—Carroll & Nunez of Memphis, Tenn., have purchased 7000 acres of timber land near Monroe, and will develop same; also establish plant for manufacture of staves and railroad ties.

St. Joseph—Timberland Development, etc.—Charles C. Cordill, Frank H. Curry, Benjamin F. Young, Wm. M. Davidson and others have incorporated the Panola Company, Limited, with capital of \$330,000, for development of timber lands, erection of saw and planing mills, manufacture of brick, etc.

## MARYLAND.

Baltimore—Piers, etc.—Western Maryland Tidewater Railroad Co. has awarded contracts for its proposed \$215,000 improvements on Winans cove to Degnon Contracting Co. for construction of coal pier of concrete on wooden piles 60x125 feet, to cost \$141,000; to Baltimore Bridge Co. for \$45,000 freight house



110x835 feet; boiler and engine house will be built under supervision of the railroad company at cost of \$25,000.

Baltimore—Chemical Company.—Yingling Chemical Co. has been incorporated for dealing in oils, chemicals, etc., with capital of \$100, by C. Roger Yingling, Samuel T. Briggs, William S. Carr and others.

Baltimore—Paint and Glass Company.—Baltimore Paint & Glass Co. has been incorporated, with capital of \$50,000, by David F. Herne, Howard C. Price, Campbell Carrington and others.

Baltimore—Mirror Company.—Capital Mirror Co. has been incorporated, with capital of \$1250, by Howard Gerken, Chas. Ritt, J. H. Bascom and others.

Baltimore—Wireless Telegraph Station.—De Forest Wireless Telegraph Co. of New York, C. C. Galbraith, vice-president and general manager, has selected site at Curtis Bay for wireless telegraph station, which, it is reported, will be removed from Sea Girt, N. J. Another station will be established at Cape Henry, work on both plants to be commenced at once.

Baltimore—Gas plant.—Raymond W. Post of Buffalo, N. Y., is in correspondence with Mayor McLane relative to the opportunities of Baltimore as site for establishment of gas plant.

Point Lookout—Telephone System.—Southern Maryland Development Co., Baltimore, Md., contemplates construction of telephone line from Point Lookout through St. Mary's, Charles and Prince George's counties to a connection with the Chesapeake & Potomac Telephone Co. at Upper Marlboro, where latter company has already established an exchange.

#### MISSISSIPPI.

Ellisville—Harrow Factory.—Company is being organized, with capital of \$30,000, for manufacturing the patent side harrow of W. E. Jones, B. F. Fridge and J. P. Myer are also interested.

Egypt—Cotton Gln.—Egypt Gln & Mill Co. will rebuild cotton gin lately reported burned; will install four 70-saw outfit.

Greenwood—Street Paving.—City will vote on issue of \$50,000 of bonds for street-paving purposes. Address The Mayor.

Hattiesburg—Wagon Company.—Hattiesburg Eight Wheel Wagon Co. has been incorporated, with capital of \$30,000, by Geo. M. Foote, S. L. Heidelberg and others.

Itabena—Timberland Development.—W. J. Cude of Kilmains, Tenn., has purchased 900 acres of timber land near Itabena, as lately reported, and will erect large saw-mill for developing the property and for manufacture of lumber.

Oxford—Cotton Gln.—Freeman Bros. will rebuild cotton gin reported burned.

Yazoo City—Ice Plant.—Yazoo City Ice & Coal Co. will double capacity of its ice factory.

#### MISSOURI.

Butler—Sewerage System.—Burns & McDonnell are engineers in charge of construction of city's proposed sewerage system recently reported. Bids will be advertised for. Address G. B. Hickman.

Kansas City—Construction Company.—Geo. H. Griffin Construction Co. has been incorporated, with capital of \$5000, by George H. Griffin, W. O. Burkey and Milton Moore.

Labelle—Electric-light Plant.—City has voted bonds for installation of electric-light plant. Address The Mayor.

Laclede—Mill and Elevator.—G. E. Bruns will erect mill and elevator, as recently reported; main building will be 30x50 feet; capacity will be fifty barrels of flour and 100 barrels feed and meal. J. L. Ong is also interested, and may be addressed.\*

Mansfield—Creamery.—Company is being organized, with capital of \$4500, for establishment of creamery. Address N. J. Craig, president, Bank of Mansfield.

St. Louis—Shoe Factory.—Peters Shoe Co. will increase capital stock from \$500,000 to \$800,000, as reported lately. Company has built and equipped new factory, which will be put in operation at once.

St. Louis—Exposition Company.—Asiatic Exposition Co. has been incorporated, with capital of \$150,000, by A. H. Handlan, W. J. Kinneale, Pope Sturgeon and others.

St. Louis—Fireproofing Company.—Chartered: Exposition Fireproofing Co., with capital of \$10,000, by G. F. Parker, R. D. Kalme, H. E. Lesan and others.

St. Louis—Foundry.—A. Kilpatrick Sons' Foundry Co. has been incorporated, with capital of \$10,000, by Alex. Kilpatrick, Jr., Alfred B. Kilpatrick and others, to operate foundry and conduct general iron and metal working business.

St. Louis—Real Estate.—A. R. Sells Realty Investment Co. has been incorporated, with capital of \$10,000, by A. R. Sells, J. W. Williams, Jr., James W. Sells and others.

St. Louis.—Chartered: Model Poultry Farm Co., with capital of \$25,000, by E. G. Martin of Kirkwood, Mo., and others.

St. Louis—Amusement Company.—Chartered: Streets of Saville Amusement Co., with capital of \$75,000, by John T. Warren, Chas. F. C. Kayser, Frank E. Reinhart and others.

St. Louis—Boiler and Machine Company.—Down Draft Boiler & Machine Co., with capital of \$25,000, has been incorporated by Max Judd, Wm. Koch, Chas. Brauner and others.

St. Louis—Dairy.—National Goat Dairy Co. has been incorporated, with capital of \$12,000, by Max R. Orthwein, Bryan Snyder, A. B. Hult, D. W. Marmaduke and others.

St. Louis—Photo Company.—Chartered: Manufacturers' Commercial Photo Co., with capital of \$50,000, by John E. Cummins, Wm. A. Cummins and others.

St. Louis—Printing, etc.—Shallcross Printing & Stationery Co. will hold meeting December 13 to decide as to increase of capital from \$40,000 to \$60,000.

St. Louis—Vinegar Company.—O. L. Gregory Vinegar Co. has been incorporated, with capital of \$10,000, by O. L. Gregory of Paducah, Ky.; R. S. Campbell, Duquoin, Ill.; Warren Hinton and E. P. Peers of St. Louis.

#### NORTH CAROLINA.

Bessemer City—Cotton Mill.—Bessemer City Cotton Mills will install additional looms. It is reported the machinery has already been purchased.

Charlotte—Clothing Company.—Charlotte Clothing Manufacturing Co. has increased capital from \$50,000 to \$75,000.

Claremont—Flour Mill.—I. W. Setzer, proprietor of the Claremont roller flour mills, is organizing stock company to operate his plant.

Dallas—Flour and Meal Mill.—L. A. Holland will erect 60-barrel flour and meal mill.

Drexel—Cotton Mill.—Reports state that the Drexel Spinning Co. has been organized to build the cotton mill previously mentioned as proposed. R. B. Mull is said to be president, and J. S. Abernathy, treasurer.

Gastonia—Flour Mill.—John A. Butler and associates are organizing stock company to erect 75 or 100-barrel flour mill.

Greensboro—Grist Mill, etc.—J. R. A. Power and T. A. Armstrong of Raleigh, N. C., will establish coal and wood yard and grist mill at Greensboro; trestle and pockets will be erected at cost of \$3000.

Greensboro—Carriage and Wagon Factory.—Rasinger Carriage & Harness Co. has commenced erection of proposed plant for manufacture of wagons, carriages, harness, etc.

Hickory—Cotton Gln.—Robert M. Bumgarner will erect cotton gin.

High Point—Flour Mill.—Hammer & Guley will erect buhr flour mill; will also install stones for feed and meal. Electricity will be motive power.

Lumberton—Naval Stores.—Lumberton Naval Stores Manufacturing Co. has been incorporated, with capital of \$100,000, for manufacture of naval stores, etc. Carr Bros. of Hattiesburg, Miss., are interested.

Manchester—Spoke and Rim Factory.—Jas. R. Tubb of Sparta, Tenn., has purchased an interest in the Manchester Manufacturing Co., whose plant will be improved and enlarged by installation of additional machinery.

Millbridge—Feed Mill.—P. O. Tatum will add new feed mill to his flour mill.

Monroe—Machine Shop.—W. G. Howard & Son will establish machine shop.

Morganton—Wagon Factory.—J. H. Coffey will enlarge his wagon factory.

Newton—Flour Mill.—Rhyne-Houk Company will install new machinery in flour mill.

Pilot Mountain—Furniture Factory.—Pilot Furniture Co. will erect three-story addition 30x55 feet to its machine room, and install additional 60-horse-power boiler and 45-horse-power engine.

Rosnoke Rapids—Cotton Mill.—Rosemary Manufacturing Co. will erect additional building two stories high, 93x100 feet, and install 2500 spindles, with complement of carding machines; also will install fifty looms in building now ready. Contracts for machinery and construction have been awarded, and work is now in progress. About \$70,000 is being expended.

Rowland—Educational.—Chartered: Rowland High School; capital \$10,000; W. W. McCormick, R. S. Bond, Frank Edens and others, incorporators.

Scotland Neck—Electric-light Plant.—City has awarded contract for erection and equipment of its proposed electric-light plant, for which bonds were recently voted. Standard Electric Co. of Norfolk, Va., has the contract.

Shelby—Cotton Mill and Water-power-Electric Plant.—Lily Mill & Power Co., reported last week as to build cotton mill, etc., will install 5000 spindles for yarn manufacture. Next spring about 500 horse-power will be developed at Stice's Shoals, five and one-half miles from Shelby, and transmitted by electricity a distance of three miles to the upper shoals, and from there to Shelby for factory, railway and lighting purposes. The exact location of the mill has not been decided, but it will use this power. The electrical plant will be so built as to permit of attaching a 600-horse-power generator at the upper shoals, which is to be developed in the future, so that 1100 horse-power can be transmitted to Shelby and vicinity. Bids are now being solicited on the textile machinery, and bids on the electrical machinery will be wanted soon. Probably the contractor for textile machinery will also have charge of engineering work. About \$100,000 will be the cost of cotton mill, but the extent of the other expenditures has not been determined. John F. Schenck of Lawndale, N. C., is president of the company.\*

Southern Pines—Publishing.—Southern Pines Publishing Co. has been incorporated, with capital of \$10,000, by Edwin Gladmon and others.

Statesville—Elevator.—Statesville Flour Mills Co. is erecting grain elevator with capacity of 40,000 bushels.

Tryon—Box Factory.—Tryon Folding Box & Carton Co. has been organized, as recently reported, for manufacture of folding boxes and cartons; building will be 50x100 feet. Address A. D. Beatson.\*

Washington—Lumber Company.—F. M. Short Lumber Co. has been incorporated, with capital of \$40,000, by Bettie W. Short, W. H. Whitley, R. B. Rodman and others.

Wilmington—Machine Repair Shop.—Henry Glavin and associates will establish machine repair shops.

#### SOUTH CAROLINA.

Anderson—Cotton Mill.—Brogton Cotton Mills has increased, as reported last week, its capital stock from \$500,000 to \$1,000,000, but only \$100,000 will be issued at present, and no improvements are contemplated.

Blacksburg—Iron-ore Company.—Bessemer Iron Ore Co. has been incorporated under New Jersey laws, with capitalization of \$500,000.

Charleston—Steamboat Company.—Bailey Steamboat Co., with capital of \$5000, and privilege of increasing to \$20,000, has been incorporated, with Henry Bailey, president; James P. Gibbs, vice-president; W. W. Wagner, secretary, and Le Grand Walker, treasurer.

Clover—Cotton Mill.—Clover Cotton Manufacturing Co. will install 3000 spindles additional, and contract for same has been awarded.

Darlington—Drug Company.—Chartered: Darlington Drug Co., with capital of \$5000, by W. B. Hoole and others.

Florence—Stalk-cutter Works.—R. C. Commander will establish works for manufacturing patented stalk-cutter, as lately reported; capacity will be fifteen cutters per day.\*

Lancaster—Machine Company.—Poag-Ferguson Machine Co. has been incorporated, with capital of \$6000, by J. L. Poag, A. B. Ferguson, W. T. Gregory and L. C. Lazenby.

Marion—Mercantile.—Chartered: Marion Grocery Co., with capital of \$10,000, by R. T. Blackwell and others.

Pickens—Knitting Mill.—Pickens Hosiery Mills, reported organized last month with \$40,000 capital, will build plant and dyehouse, but all details have not been decided. Roland L. Lee is president.

Rowesville—Tie and Lumber Company.—Rowesville Tie & Timber Co., reported recently as incorporated with capital of \$3000, has completed organization, electing J. E. Boone, president; D. N. Cox, vice-president; O. L. Crum, secretary-treasurer.

Swansea—Turpentine Plant.—J. E. Gantt contemplates establishing plant for manufacture of turpentine and other by-products from pine stumps.\*

#### TENNESSEE.

Athens—Manufacturing.—Chartered: Prather-Walker Manufacturing Co., with capital of \$15,000, by A. W. Prather, B. W. Walker, U. G. Thompson, C. T. Riddle and others.

Chattanooga—Medicine Factory.—Blackman Stock Remedy Co. has increased capital from \$10,000 to \$20,000.

Franklin—Water-works.—Kirkpatrick & Johnson, Jackson, Miss., are making surveys for gravity system of water-works for Franklin; C. R. Berry, mayor.

Harriman—Knitting Mill.—Harriman Knitting Mills, reported last month as incorporated with \$25,000 capital, has secured suitable buildings and is installing equipment for manufacturing underwear. Ten knitting machines and bleachery will be operated. Contracts for equipment have been awarded.

Jefferson City—Electric-light Plant.—G. A. Moody has applied for franchise for installation of electric-light plant for lighting city.

Johnson City—Furniture Company.—Armbrust-Smith Company (established) has been incorporated, with capital of \$20,000, by L. Armbrust, F. H. Parks, Guy L. Smith, Thad. A. Cox and others.

Knoxville—Publishing.—Chartered: Knoxville Printing & Publishing Co., with capital of \$10,000, by Washington Danenhower, Eugene R. Roberts, Alfred Y. Burrows, Orrin C. Beeman and others.

Memphis—Subway.—Southern Railway has awarded contract to Charles R. Miller Paving Co. at \$38,000 for building concrete part of its proposed subway.

Nashville—Land Improvement.—Murphy Land Co. has increased capital from \$50,000 to \$400,000, and will erect a number of new dwellings and make other improvements.

Nashville—Crematory.—Board of public works has decided upon installation of \$5000 garbage crematory.

#### TEXAS.

Abilene—Mercantile.—Chartered: McDaniel Mercantile Co., with capital of \$20,000, by G. W. McDaniel and others.

Beaumont—Oil and Mineral Lands.—The Colorado Syndicate has been chartered, with capital of \$25,000, to develop oil and mineral lands, by James W. Swayne of Fort Worth, W. L. Adkins, Columbus; C. W. Brooks, Beaumont.

Beaumont—Canal.—San Jacinto Canal & Rice Co. has, it is reported, absorbed the Treadaway Canal Co., and will make extensive improvements.

Brownsville—Rice Mill.—D. J. Hayes, Houston representative of the Boland & Gschwind Rice Milling Machinery & Irrigation Co. of New Orleans, La., has secured contract for supplying machinery for proposed \$250,000 rice mill to be built in Brownsville.

Dallas—Gravel Company.—Dallas Gravel Co., with capital of \$5000, has been chartered by Wm. J. Betterton, Samuel J. Morgan and Chas. L. Betterton.

Dallas—Immigration.—Chartered: Southwestern Immigration Co., with capital of \$40,000, by G. P. Lane, E. W. Luna and W. B. McClellan.

Dallas—Mercantile.—Chartered: Young, Hentz & Co., with capital of \$50,000, by J. W. Young and others.

Denton—Wire-fence Company.—Texas Wire Fence Co. has been incorporated, with capital of \$20,000, for manufacture of wire fences, by G. W. Hammon, E. J. Brock, G. H. Blewett and others.

Galveston—Furniture Company.—Buehler Furniture Co. has been incorporated, with capital of \$4800, by William Buehler, Chas. W. Gill and others.

Gonzales—Oil Wells.—Gonzales Oil Co. has purchased 110 acres of land, and will sink five wells at once.

Houston—Subway.—International & Great Northern Railroad Co., Houston Electric Co. and the city of Houston have decided definitely to construct proposed Preston-avenue tunnel.

Houston—Rice Milling.—Lane City Rice Milling Co. has increased capital from \$100,000 to \$200,000.

Mineral Wells—Bridge.—Palo Pinto county will vote December 29 on issue of \$40,000 of bonds for construction of two bridges across Brazos river. Address County Clerk.

Orange—Electric Plant and Water-works.—Orange Ice, Light & Water-Works Co. will make extensive improvements to its plants.

Port Lavaca—Irrigation System.—J. A. Lindberg, Dayton, La., and associates will, it is reported, construct irrigation system.

Seymour—Live-stock.—Chartered: E. C. Steerling & Sons, with capital of \$170,000, by F. A. Steerling, Mark Hopkins, Jr., and others.

Sour Lake—Oil Wells.—Reeves Oil Co. has been incorporated, with capital of \$10,000, by C. D. Reeves, J. R. Cheek and L. McNeal.

Sour Lake—Air Plant.—Sour Lake Light &



Power Co. is constructing air plant which will have capacity of 1000 feet per minute.

**Terrell—Iron Foundry.**—Terrell Iron Foundry will be operated under new management as the Terrell Foundry & Machine Co., incorporated with capital of \$10,000 and M. A. Joy, president; C. M. Cunnbaugh, secretary-treasurer, and H. F. Whiting, general manager. New machinery will be installed and other improvements made.

**Wallis—Pumping Plant.**—Texas Land & Irrigation Co., recently reorganized under new management with A. B. Scrogin, president, will contract for erection of pumping plant of from 17,000 to 20,000 gallons per minute; cost \$25,000. John W. Maxey, Houston, Texas, is designing engineer.

#### VIRGINIA.

**Basic City—Extract Plant.**—Basic Extract Co. has been incorporated, with capital of \$25,000, as recently reported, for manufacture of extracts; capacity twenty-five to fifty barrels per day.\*

**Farmville—Knitting Mill.**—Prince Edward Knitting Co. will improve its mill, including the addition of a dyeing department.

**Graham—Coal Company.**—Stone Branch Coal Co. has increased capital from \$36,000 to \$50,000.

**Independence—Real Estate.**—Grayson Real Estate Co. has been incorporated, with capital of \$12,000, and R. L. Kirby, president.

**Lynchburg—Foundry.**—Lynchburg Plow & Foundry Co. has amended charter, changing name to Lynchburg Foundry Co.

**Lynchburg—Tobacco Company.**—Virginia Tobacco Co. has been incorporated, with capital of from \$20,000 to \$50,000. J. W. Timberlake is president.

**Martinsville—Telephone System.**—Henry County Telephone Co., previously reported incorporated with capital of \$5000 for construction of telephone system, has commenced work of construction. W. O. Minter of Leatherwood is president, and E. L. Williamson of Martinsville, secretary-treasurer.

**Martinsville—Lumber Company.**—W. L. Clement Lumber Co. has increased capital from \$25,000 to \$100,000.

**Newport News—Electric-light Plant.**—City contemplates erecting electric-light plant. Address A. A. Moss, mayor.

**Norfolk—Paving.**—Denby Grading Co. has contract at \$45,000 for placing stone curbing in Park Place.

**Norfolk—Ice Factory.**—Norfolk Ice Co. has been incorporated, with capital of from \$25,000 to \$300,000, and Geo. W. Day, president. It was reported some time ago that this plant had been purchased by parties representing the bondholders, and that company would be reorganized.

**Richmond—Pumping Plant.**—Electric Construction Co. of Virginia has contract at \$25,000 to erect electric pumping plant for the new standpipe at Richmond.

**Richmond—Lime Company.**—Powhatan Lime Co. has increased capital to \$25,000.

**Richmond—Lime Company.**—Moore Lime Co. has increased capital to \$25,000.

**Salem—Publishing.**—Salem Printing & Publishing Co. has been incorporated, with capital of from \$10,000 to \$15,000, by C. D. Dennett (president) and others.

**Williamsburg—Knitting Mill.**—Williamsburg Knitting Mill Co., reported recently as increasing capital by \$30,000, will install carding and spinning machinery.

#### WEST VIRGINIA.

**Bluefield—Brick Works, etc.**—Silica Brick & Land Co. has been incorporated, with capital of \$100,000, for manufacture of brick, etc., by A. I. Godfrey, Bramwell, W. Va.; John Tierney, Yards, Va.; David E. Johnson, R. C. McLaugherty, Bluefield, and others.

**Bluefield—Brewery.**—Bluefield Brewing Co. has increased capital from \$100,000 to \$150,000.

**Charleston—Coal Mines.**—Blue Creek Coal & Land Co. has purchased more than 11,000 acres of coal and timber lands, and will construct railroad and erect saw-mill for extensive development of the property.\*

**Fairmont—House Furnishing.**—Chartered: Coal City House Furnishing Co., with capital of \$50,000, by G. M. Jacobs, H. H. Snodderly, Robert Cunningham and others.

**Huntington—Real Estate.**—Cabell Real Estate Co. has been incorporated, with capital of \$25,000, by George I. Neal, J. L. Caldwell, H. B. Hagan and others.

**Huntington—Coal Mines.**—Guyan Fuel Co. will erect large steel tipples and make other improvements for increasing output of its mines.

**Logan—Coal Mines.**—Joe Barlow, formerly

of the Elkhorn Coal & Coke Co., and associates have purchased for development large tracts of coal land near Logan; mining plant with capacity of 1000 tons per day will be installed at once.

**Mahan (not a postoffice)—Coal Mines.**—Hickory Camp Coal & Coke Co. has been incorporated, with capital of \$50,000, for development of coal mines, manufacture of coke, etc., by J. W. Mahan of Huntington, W. Va.; G. F. Neadows, J. E. Chilton, W. E. Chilton, T. S. Clark, Charleston, W. Va., and others.

**Parkersburg—Oil Wells.**—Flat Rock Oil Co. has been incorporated, with capital of \$50,000, as recently reported, and will develop 326 acres of oil lands. Address S. D. Stewart.

**Ronceverte—Flour Mill.**—Fulton & Price will erect 100-barrel flour mill; machinery not purchased.

**Simpson—Coal Mines.**—Maryland Coal Co., Lonaconing, Md., has purchased and will develop 1420 acres of coal land near Simpson, installing complete mining plant at once.

**Victor—Flour Mill.**—J. C. Little will erect flour mill, and has not contracted for equipment.

**Wheeling—Glass Works.**—Wheeling Glass Letter & Novelty Co. will make extensive improvements, which include erection of new warehouse 40x120 feet, installation of new machinery for increasing capacity of etching and packing rooms, new furnace, etc.\*

**Wheeling—Coal Mines.**—Morehead Coal Co. has been incorporated, with capital of \$500,000, by Jas. R. Herberston, William Herberston, James I. Thornton and George Moorehead, all of Brownsville, Pa. Address Jas. R. Herberston, secretary.

#### INDIAN TERRITORY.

**Durant—Electric-light Plant and Water-works.**—City has voted issue of \$89,000 of bonds for water-works and electric-light plant recently reported. Address The Mayor.

#### OKLAHOMA TERRITORY.

**Guthrie—Gas and Oil Lands.**—Oklahoma Oil Co., with principal office at 51 Wall street, New York, has been incorporated, with capital of \$50,000, for developing oil and gas properties in Oklahoma. William Clifford Moore, Chas. M. Bleecker, L. S. Wheeler, Harriman N. Simons and E. Hicks Herick, all of New York, are the incorporators.

**Lawton—Mining.**—Union Mining & Milling Co. has been incorporated, with capital stock of \$1,000,000, by Louis Davis, W. D. Oliver, A. H. Stewart and John A. Leberman.

**Lawton—Water-works.**—City will construct \$75,000 system of water-works, as recently reported, and will advertise for bids in few weeks. G. H. Mathes of Lawton is chief engineer, and will have charge of construction.

**Lawton—Gas Plant.**—Consolidated Oil Co. has been granted franchise for lighting city with gas, and will install plant at once.

**Lawton—Mining.**—Cache Creek Mining Co., with capital stock of \$1,000,000, has been incorporated by Ola Pierson, J. E. Thompson and E. S. Gallagher.

**Lawton—Mining.**—Gold Crown Mining & Milling Co. has been incorporated, with capital stock of \$2,000,000, by F. H. Lewis, L. J. Latham, Albert Houtz, A. B. Moore and others.

**Lookaba—Gas and Oil Company.**—Caddo Crude Oil & Gas Co. has been incorporated, with capital stock of \$1,000,000, by R. W. Opfinger of Lookaba, A. L. Wilson of Anadarko and D. B. Merry of Oklahoma City.

**Oklahoma City—Novelty Company.**—Southwestern Novelty Co. has been incorporated, as recently reported, by Ruth McDavie, Claire Rone, Martha Cox and others. Address 111 Friscoe street.\*

**Oklahoma City—Sanitarium Company.**—Chartered: Appalachian National Park Sanitarium Co. of Oklahoma City and Henderson county, North Carolina, with capital stock of \$500,000, by M. Hewetson and John F. Noel of Chicago, Ill.; L. M. Thompson of Oklahoma City and others.

**Pawnee—Mining.**—Holmes Big Four Mining Co. has been incorporated, with capital stock of \$500,000, by M. M. Holmes, O. M. Lancaster, J. D. Shepard, Frank Hudson and James H. Sterling.

**Shawnee—Water-works.**—City has voted issue of \$125,000 of bonds for water-works extension recently reported. Address C. J. Bocher, mayor.

#### BURNED.

**Athens, Ga.**—Science Hall of University of Georgia; loss \$50,000.

**Atlanta, Ga.**—W. K. Booth's carriage factory, 26 Peters street.

**Belington, W. Va.**—Shomore & Shomore's planing mill.

**Berwick, La.**—Hanson Bros. & Trevis' shingle mill; estimated loss \$3000.

**Cerrogordo, Tenn.**—Amos Hardin's distillery; loss about \$3000.

**Corsicana, Texas.**—Corsicana Shoe Factory and Corsicana Mattress Factory.

**Doyleville, Va.**—T. L. Early's bark, grist and saw mill; estimated loss \$7000.

**Driver, Va.**—John C. Wilroy's cotton gin; loss about \$3000.

**Kelvingrove, N. C.**—R. M. Jones & Co.'s saw-mill and cotton gin; loss about \$3000.

**Lott, Texas.**—N. A. Neal's cotton gin, valued at \$3000.

**Montevallo, Ala.**—Wilton Hotel, owned by Mrs. W. J. Galloway of Talladega, Ala.; estimated loss \$35,000.

**Mound, La.**—F. L. Maxwell Mercantile Co.'s cotton gin; estimated loss \$10,000.

**New Berne, N. C.**—J. M. Spencer's cotton gin.

**Norfolk, Va.**—Mills of the Hitch Lumber Co. at Pinners Point.

**Norfolk, Va.**—Rowland Lumber Co.'s pier at Pinners Point.

**Opelika, Ala.**—J. E. Wagon's candy factory; loss about \$1500.

**Orangeburg, S. C.**—William S. Barton, Jr.'s grist mill and cotton gin, valued at \$3000.

**Ozark, Ark.**—Big Burcham's cotton gin, valued at \$4000.

**Petersburg, Va.**—Petersburg Wood Supply Co.'s factory; estimated loss \$6000.

**Rome, Ga.**—Rome Furniture & Lumber Co.'s dry-kill, valued at \$10,000.

**Salina, I. T.**—Indian Orphan Asylum, valued at \$120,000.

**Rome, Ga.**—Rome Pants Factory; loss about \$5000.

**San Antonio, Texas.**—Rudolph Opperman's broom factory; estimated loss \$4000.

**St. Louis, Mo.**—Koken Iron Works damaged to extent of \$45,000.

#### BUILDING NOTES.

\* Means machinery, proposals or supplies are wanted, particulars of which will be found under head of "Machinery, Proposals and Supplies Wanted."

**Abbeville, Ga.**—Courthouse.—Wilcox county will vote December 14 on issue of \$40,000 of bonds with which to pay for erection and completion of new courthouse now building for said county; S. S. Fryar, clerk.

**Ablene, Texas.**—Residence.—John Boyer will receive bids until December 7 for superintendent's residence for State epileptic colony at Abilene. Plans and specifications were prepared by Wm. Proctor Preston, and can be seen at office of Sanguinet & Statin in Fort Worth and Dallas, Texas, and at State Epileptic Colony, Abilene.

**Atlanta, Ga.**—Residence.—Lee Douglass has purchased site at \$12,500 and will erect residence.

**Atlanta, Ga.**—Dwelling.—Frank M. Potts will build two-story residence at cost of \$15,000.

**Atlanta, Ga.**—Dwellings.—Green T. Dodd has had plans made for erection of three two-story dwellings; cost \$50,000.

**Atlanta, Ga.**—Dwelling.—Harry L. Schlesinger will erect two-story residence with slate roof and to cost \$12,000.

**Augusta, Ga.**—Hotel.—Bryan Lawrence is interested in the erection of new hotel to cost about \$350,000.

**Baltimore, Md.**—Chapel.—James Carey has contract at \$7000 to erect chapel at Irvington for the French Dominican Sisters, previously reported.

**Chapel Hill, N. C.**—Gymnasium.—Frank P. Milburn of Columbia, S. C., has prepared plans for \$25,000 gymnasium for University of North Carolina. Contract will soon be awarded.

**Chattanooga, Tenn.**—Library.—Joseph Trimby has contract at \$32,000 for erecting Carnegie Library previously reported.

**Chattanooga, Tenn.**—Residence.—Sam R. Read will erect \$30,000 residence after plans by W. T. Downing.

**Columbia, S. C.**—Hospital.—Frank P. Milburn will prepare plans for hospital building to be erected by Roman Catholic Church.

**Columbia, S. C.**—Business Building.—J. L. Minnaugh will erect three-story business building.

**Dallas, Texas.**—Business Building.—P. H. Kiebler is erecting \$11,000 business building.

**Dothan, Ala.**—Jail.—Pauly Jail Co. of St. Louis, Mo., has contract for erecting proposed jail at Dothan, for which bids were recently advertised in these columns.

**Durant, I. T.**—Hotel.—Hotel to cost \$15,000 will be erected by local parties. Names of those interested will be announced later.

**El Dorado, Ark.**—Jail.—Contract has been awarded Pauly Jail Co. at \$21,500 for erection of Union county's jail, previously reported.

**Fort Howard, Md.**—Buildings.—Sealed proposals (in triplicate) will be received until December 22 at office depot quartermaster, United States army, Room 807, Equitable Building, Baltimore, Md., for construction of one double frame building, non-commissioned officers' quarters, at Fort Howard, and for the plumbing and electric wiring in said building. United States reserves usual rights. Information furnished on application to S. Avery, Jr., first lieutenant, artillery corps, constructing quartermaster.

**Fort Worth, Texas.**—Hotel.—J. W. Coon of Austin and J. H. Madigan of Houston, owners of the Hotel Worth building, are considering plans for improving and enlarging the building at cost of \$125,000.

**Goldsboro, N. C.**—Government Building.—King Lumber Co. of Charlotte, N. C., has contract at \$35,000 for erecting government building at Goldsboro.

**Greenville, Tenn.**—Federal Building.—Miles & Brandt of Atlanta, Ga., have contract at \$86,000 for erection of new federal building at Greenville.

**Jackson, Miss.**—Hotel.—F. J. McGraw has contract at \$72,000 for erecting proposed Jackson Hotel.

**Jackson, Miss.**—Office Building.—F. J. McGraw has contract at \$21,000 for erecting five-story office building of Carl von Seuter.

**Kansas City, Mo.**—Church.—Independence Avenue Christian Church will erect edifice to cost \$114,000, as reported recently. Van Brunt & Howe are the architects.\*

**Keyser, W. Va.**—Church.—Henry Baker has contract for erecting proposed new United Brethren Church.

**Knoxville, Tenn.**—Depot.—Louisville & Nashville Railroad Co., Geo. E. Evans, Louisville, Ky., general manager, has awarded contract to Anderson & Co. of St. Louis, Mo., at \$125,000 for erection of its proposed depot. This contract does not include plumbing, heating and lighting.

**Lake Charles, La.**—Hotel.—St. Clair Hotel is being remodeled at cost of \$10,000.

**Memphis, Tenn.**—Bank Building.—Tennessee Trust Co. will, it is reported, erect new building of about fifteen stories.

**Memphis, Tenn.**—Depots, etc.—Mobile, Jackson & Kansas City Railroad Co. will award contracts aggregating \$335,000 for erection of depots and section-houses along the line of its new road from Beaumont, Miss., to Pontotoc, Miss., a distance of 238 miles. Address Chief Engineer Hayden, Mobile, Ala.

**Meridian, Miss.**—Station.—Frank P. Milburn of Columbia, S. C., will prepare plans and specifications for proposed \$150,000 union passenger station to be erected by several railroads.

**Mooreville, N. C.**—Warehouse.—I. W. Hudson & Son will erect cotton warehouse.

**Moultrie, Ga.**—School.—City will vote in January on issue of \$25,000 of bonds for erecting school building recently reported; J. F. Monk, mayor.

**New Orleans, La.**—Postoffice Improvement. Bid of William Van Meter (\$5887) has been accepted for repairs and addition to post-office.

**Norfolk, Va.**—Church.—First Lutheran Church will erect new edifice, as recently reported; will be 75x35 feet. Wm. Swartz is architect.\*

**Paducah, Ky.**—Flats Building.—Mayor Yelser contemplates erection of flats building.

**Paducah, Ky.**—Business Building.—Architect McKinnon is preparing plans for three-story brick building to cost \$5000 for the Lieber estate.

**Paintsville, Ky.**—Building.—J. R. Gleske, Cerro, W. Va., will receive bids until December 14 for erection and completion of union hall, Sandy Valley Seminary, Paintsville. Plans and specifications may be seen and obtained from the following after December 1: B. L. Priddle, Huntington, W. Va.; A. R. Johnson, Ironton, Ohio; P. K. Mallin, Ashland, Ky.; Rev. Z. Meeks, Catlettsburg, Ky.; M. F. Conley, Louisa, Ky.; John C. C. Mayo, Paintsville, Ky., and at office of J. R. Gleske.



Rockingham, N. C.—Bank Building.—Bank of Pee Dee will erect \$20,000 building.

Rutledge, Tenn.—Courthouse.—Grainger county will build \$25,000 courthouse. Address County Clerk.

Somerville, Texas.—Business Building.—Louis Holman will erect business building.

St. Louis, Mo.—Hotel.—M. C. Hemenway, Henry Koehler, C. F. Blanke and others have incorporated the American Hotel Co., with capital of \$100,000.

Sulphur, I. T.—Church.—Architect Leonard has prepared plans and specifications for church to be erected by Catholic congregation.

Union, S. C.—Lodge Building.—Frank P. Milburn of Columbia, S. C., will prepare plans for Masonic Temple building at Union.

Washington, D. C.—Dwellings.—Henry A. Willard and John H. Ketcham will have plans prepared at once for erection of fifty dwellings, expending about \$200,000.

Washington, D. C.—Y. M. C. A. Building.—The Young Men's Christian Association will erect entirely new structure and remodel present building. Harding & Upman will prepare plans, which will call for building six stories, of brick and stone, 75x175 feet, to contain all modern improvements and to cost \$200,000.

Washington, D. C.—Hotel.—Otto Ulrich will erect three-story hotel building after plans by B. Stanley Simmons.

Washington, D. C.—Dwellings.—F. T. Sanner will erect three three-story brick and brownstone dwellings, heated by steam, etc.

Washington, D. C.—Apartment house.—Karrick & Metcalf will erect \$36,000 apartment house.

Welch, W. Va.—Store and Office Building. Payne, Strother & Payne will open bids December 16 for erection of brick store and office building. Plans and specifications may be had at office of W. Burbridge Payne or office of S. B. Chandler, architect, No. 225 Princeton avenue, Bluefield, W. Va. Usual rights reserved.

West Palm Beach, Fla.—George Zapf will erect business building, as lately reported, to cost \$16,000.\*

Whitesburg, Ky.—School.—City will issue bonds for rebuilding school recently reported burned; structure will be of brick and cost probably \$5000. Architect has not been engaged; James P. Lemis, county judge.

Woodlawn, Ala.—School.—City has voted issue of \$15,000 of bonds for erection of school building. Address The Mayor.

Yorkville, S. C.—Church.—W. T. Beamguard of Clover, S. C., has contract to erect new edifice at Yorkville for Union Baptist Church.

## RAILROAD CONSTRUCTION.

### Railways.

Asheville, N. C.—Reported that the Howland Improvement Co. will build a cable-car line from Asheville to the top of Sunset mountain, two miles.

Athens, Ga.—Reported that \$10,000 has been raised in Athens and \$20,000 in Franklin and Madison counties for the proposed electric railway from Athens to Carnesville, thirty-two miles. W. F. Brown is chief engineer at Carnesville, and E. H. Van Wey of Toledo, Ohio, is also interested. J. R. Dortch and S. M. Ayers of Carnesville are also reported interested. A branch may be built from Pocotaligo to Danielsville, six miles.

Atlanta, Ga.—Mr. Charles A. Wickersham, president of the Atlanta & West Point Railroad Co. and the Western Railway of Alabama, writes the Manufacturers' Record saying: "It is not our present intention to enlarge our yards at Montgomery, Ala."

Boiton, N. C.—J. L. Britton of the Whiteville Lumber Co. is reported to be building a tram railroad from Blue's Crossing to Black Kila Ridge.

Charleston, W. Va.—The Blue Creek Coal & Land Co. informs the Manufacturers' Record that it is preparing to build the first ten miles of its railroad to open up more than 11,000 acres of coal land along Blue creek. This line is the proposed Imboden & Odell Railroad.

Charlottesville, Va.—The incorporation of the Charlottesville & Albemarle Railroad Co. is reported, with C. M. Bolton, president; capital stock from \$50,000 to \$100,000.

Cape Girardeau, Mo.—McArthur Bros. of Chicago are contractors on the St. Louis & Gulf Railway from Zeta to Vanduser, eleven miles, and from Bloomfield to Campbell, thirty-five miles.

Dallas, Texas.—Chief Engineer J. W. Pethram of the Missouri, Kansas & Texas Railroad is reported as saying that construction

will begin immediately on the extension from Georgetown to Austin, Texas, about thirty miles.

Dallas, Texas.—B. S. Wathen, chief engineer of the Texas & Pacific Railway, writes the Manufacturers' Record denying a press report that the company will build a branch from New Iberia, La., to Alexandria, La. About three years ago there was under consideration a plan to build a line from Rosa or Palmetto Station southward to New Iberia, reaching Washington, Opelousas, Crowley, Abbeville, St. Martinsville, etc., by a loop line, but there is no probability of this being done in the near future, if ever.

Denver, Col.—David W. Moffat and others are reported interested in a plan to build a line from Douglas, Ariz., to Topolobampo, on the west coast of Mexico, connecting there with the Kansas City, Mexico & Orient Railway and continuing south and up the Guadalajara valley. The line is to be known as the Mexican & Pacific Coast Railway, and will be 1500 miles long.

De Ridder, La.—The Hudson River Lumber Co. proposes to build five miles of railroad, and is seeking a contractor to clear the right of way and do the grading.

Elkins, W. Va.—It is rumored that the Coal & Coke Railway will purchase the Little Kanawha Railroad, extending from Parkersburg to Palestine, and will extend it to Wellington, about fifteen miles. H. G. Davis is president of the former at Elkins.

Eureka Springs, Ark.—S. W. Lee, chief engineer of the St. Louis & North Arkansas Railroad, is reported making a survey south from Harrison, Ark., possibly to build a branch to the mining regions of Newton county.

Galveston, Texas.—It is now reported that the contractor for building the Saratoga branch of the Gulf, Colorado & Santa Fe Railway is the Grigsby Construction Co. of Dallas, and not Hugh Burus, as heretofore reported.

Galveston, Texas.—It is now reported that the Gulf, Colorado & Santa Fe Railway, and not the Missouri, Kansas & Texas, is the purchaser of the Cane Belt Railroad, and that an extension will be built to connect with the Eastern Railway of Mexico, making a total of about 800 miles of new road. C. F. W. Felt is chief engineer of the Santa Fe at Galveston.

Galveston, Texas.—The Gulf & Interstate Railway will, it is rumored, build an extension eastward into the rice and sugar districts of Louisiana. J. W. Campbell is receiver.

Guthrie, O. T.—Reported that the Missouri, Kansas & Texas Railway will complete its line into Guthrie by December 15, securing the balance of the right of way and finishing the tracklaying immediately.

Hagerstown, Md.—Reported that the Hagerstown Electric Railway Co. may extend its line into Berkeley county, West Virginia.

Hampton, Va.—Mr. H. H. Carr, general manager of the Newport News & Old Point Railway & Electric Co., writes the Manufacturers' Record that the press report about its building a line to Yorktown is erroneous, as the company has no intention of doing so. It is, however, understood that some parties are considering plans to build such a line.

Hayneville, Ala.—W. P. McGaugh, secretary of the Hayneville Railway Co., informs the Manufacturers' Record that about three miles have been graded on the proposed eight-and-one-half-mile line from Hayneville to Tyson's Station.

Houston, Texas.—The Houston & Texas Central Railroad, it is reported, may build extensive terminals at Dallas. A. N. Kellogg is engineer maintenance of way at Houston.

Independence, Va.—R. L. Kirby writes the Manufacturers' Record that the Grayson Real Estate Co. has the charter for an electric railway from the terminus of the Norfolk & Western Railway at Oldtown to its terminus at Troutdale, in the west end of the county. An extension of the Norfolk & Western Railway into the east end of Grayson county is being pushed, to be completed as soon as possible.

Kansas City, Mo.—The proposed Stockton Southeastern Railroad from Eldorado Springs to Stockton, Mo., nineteen miles, will have a maximum grade of 1 per cent., a maximum curve of 4 degrees, and the rails will be fifty-six pounds to the yard. George F. Wolfe, 303 Temple Building, is president.

Kirkville, Mo.—It is reported that construction will soon begin on the Kirkville & Novinger Electric Railway.

Lawton, O. T.—Mr. Charles Mitschlich, secretary, informs the Manufacturers' Record that an electric street railway franchise

in Lawton has been voted to the Lawton, Wichita Mountain & Western Electric Railway Co. Mr. Wm. Turner also writes the Manufacturers' Record that the company furthermore proposes to build through the Wichita mountain gold-mining region, and thence to Hobart, O. T.

Little Rock, Ark.—The Little Rock Northern Railroad Co. has been granted a charter. It proposes to build a line from Little Rock to Springfield, Mo., about 280 miles. The line is to run through the Arkansas counties of Pulaski, Faulkner, Cleburne, Van Buren, Searcy, Marion and Boone, and the Missouri counties of Taney, Christian and Greene. About 180 miles of line will be in Arkansas and about 100 in Missouri. The incorporators are Andrew Johnson of New York, Charles T. Coleman of Philadelphia, W. W. Dickenson, John M. Rose and H. M. Armistead of Little Rock. Mr. Johnson is reported as saying that the charter is a revival of a charter granted to the same parties two and one-half years ago, and which will expire in about thirty days; also that about \$100,000 have been spent for surveying, etc., but that financial arrangements for building the line are not yet completed. H. S. Calloway of Philadelphia is named as attorney for Mr. Coleman.

Louisville, Ky.—The Louisville & Nashville Railroad is reported to be surveying for an extension from Selma, Ala., to Demopolis and Meridian, Miss., about 100 miles. It is also reported that the L. & N. will build from Hygela Springs, Tenn., to Clarksville, Tenn., and that a short line may be built from Princeton to Shawneetown to make a more direct route between Nashville and St. Louis. R. Montfort is chief engineer.

Monte Ne, Ark.—Reported that a survey has been completed for a railway from Lowell, Ark., to Gentry, Ark., twenty-two miles, and that W. H. Harvey, president of the Monte Ne Railway, is interested. It was also reported that a survey will be made to Siloam Springs.

Muskogee, I. T.—The Muskogee Southern Railroad has completed its track from Muskogee. It is reported, to within six miles of Russell, twenty-five miles, and a mile of track per day is being laid. The company has raised its capital from \$2,000,000 to \$5,000,000. The incorporators are C. N. Haskell of Ottawa, O.; William Hutelings and W. R. Entton of Muskogee, I. T., and Luther West, Horace Speed and Thomas J. Lowe of Guthrie.

Nashville, Tenn.—H. H. Ziegler of Columbus, Ohio, is quoted as saying that construction will begin soon on the McMinnville, Woodbury & Nashville Railway. It is further reported that the construction contract has been let, and that the road will be extended after reaching McMinnville for a distance of twenty miles to coal lands, the distance from Nashville to McMinnville being about sixty miles. C. M. Henley and W. M. Gamble, both of Columbus, Ohio, and W. H. Bellis of Indianapolis, Ind., are also interested. The capital stock is to be increased from \$100,000 to \$1,000,000, and later may be raised to \$2,500,000.

Navasota, Texas.—A meeting has been held to take steps to build a proposed Trinity & Smithville Railroad. J. J. Feider is chairman of the committee, and others interested are Ward Templeman and R. A. Horlock of Navasota, W. S. Gibbs of Huntsville, R. Burns and S. L. Staples of Smithville, T. A. Low of Brenham and John Schumacher and J. F. Wolters of La Grange.

Oklahoma City, O. T.—Reported that surveys are complete for the Oklahoma City & Denver Railroad between Oklahoma City and Carmen, 118 miles.

Okolona, Miss.—The Okolona branch of the Southern Railway is reported completed as far as Houston, twenty miles. The line is to be continued to Vardaman, about ten miles further.

Otter Creek, Fla.—The Otter Creek Lumber Co. informs the Manufacturers' Record that it has not yet decided to extend its railroad.

Pensacola, Fla.—Reported that the Memphis & Gulf Railroad Co., lately organized to build a line from Grenada, Miss., to Pensacola, has purchased the line of the Pensacola, Alabama & Tennessee Railroad, running northwest from Pensacola to Muscogee, Fla., about thirty-one miles. A survey is now under way for the balance of the route.

Pensacola, Fla.—A charter has been granted the Pensacola, Alabama & Western Railroad Co., which proposes to build from Pensacola to the Alabama State line, about forty-five miles. H. L. Covington is president.

Philippi, W. Va.—Judge J. H. Holt has given a decision allowing the Bellington & Northern Railroad (Wabash) rights of way

on the west bank of the Tygart river, between the Middle Fork and the Buckhannon rivers, notwithstanding that a survey had previously been made by the West Virginia Short Line, part of the B. & O. This will permit the Wabash to proceed with its construction. A similar decision in favor of the Wabash, giving it rights in that city, is reported from Fairmont, W. Va.

Pittsburg, Pa.—W. C. Cushing, chief engineer maintenance of way, Pennsylvania lines, writes the Manufacturers' Record denying the report that it is the purpose of the company to double-track its line between Louisville and Indianapolis.

Portsmouth, Va.—Mr. J. M. Barr, vice-president Seaboard Air Line Railway, writes the Manufacturers' Record denying the report that the company will provide a new freight terminal at Richmond, but says that some additions are being made to the present terminal.

Redwater, Texas.—Mr. V. E. Buron, secretary of the Northeast Texas Railway Co., writes the Manufacturers' Record that the company has built two and one-half miles of main line south from Redwater. From the end of this line a spur runs to Spencer's Mill, ten and one-half miles, but in about a month, when the lumber there is moved, the spur track will be taken up and laid on the main line, which is ready to receive it. The objective point of the road is Cusseta, about twenty-three miles from Redwater.

Richmond, Va.—Reported that a connection will be built between the Chesapeake & Ohio Railway and the Cincinnati, Hamilton & Dayton Railway. F. I. Cabell is engineer of construction of the C. & O.

Sedgwick, Ark.—E. P. C. Biggs is reported as contractor on the Cache Valley Railroad, building ten miles of line northeast from Sedgwick. Five miles have been graded. W. T. Blackford is chief engineer.

St. Louis, Mo.—The Missouri, Kansas & Texas Railway will, it is reported, build an extension from Wilburton, I. T., to coal lands, it having been constructing a line already between Carbon and Wilburton. S. B. Fisher is chief engineer at St. Louis.

Suffolk, Va.—The Suffolk & Carolina Railway is reported to be surveying for an extension from Rockford, N. C., to Gt. Falls, eleven miles. J. C. Caney, Jr., is chief engineer.

Vicksburg, Miss.—Mr. L. Burns, Jr., writes the Manufacturers' Record confirming the report that he and others are trying to promote the building of a railroad from St. Joseph northwest to Monroe or Rayville, La., fifty to sixty-five miles.

Washington, D. C.—The Southern Railway will, it is reported, rebuild the Knoxville & Bristol Railway, extending from Morristown forty miles to Coryton, Tenn., and use it as a coal road. W. H. Wells is engineer of construction at Washington.

Washington, D. C.—The Old Dominion & Great Falls Railway has decided to ask for bids immediately for six miles of line. John R. McLean, Senator S. B. Elkins and others are interested.

Welch, I. T.—S. C. Bear and others are reported interested in a plan to build a railroad from Baxter Springs, Kan., via Welch to Centralia, I. T., and thence into Oklahoma, a distance of more than 100 miles.

Willingham, Ga.—Mr. C. A. Alford, president of the Flint River & Gulf Railway, writes the Manufacturers' Record that about thirteen miles has been graded between Ashburn and Sylvester and four miles has been graded south of Sylvester, with two miles of track laid. Work is still going on, and it is hoped to complete the line from Ashburn, on the Georgia Southern & Florida Railway, to Carlisle, on the Georgia Northern Railway, thirty-two miles, some time next year. It crosses the Atlantic Coast Line at Sylvester.

### Street Railways.

Elizabeth City, N. C.—The Elizabeth City Water & Power Co. has been granted an extension of time until March 1 next for beginning construction on its proposed street railway.

Memphis, Tenn.—The City Street Railway Co., promoted by St. Louis capitalists, has been granted a franchise in Memphis. Those interested are Corwin H. Spencer, J. G. McGannon, L. G. McNair and others.

Mobile, Ala.—The Mobile Light & Railroad Co., successor of the Mobile Street Railroad Co., the Mobile & Spring Hill Railroad Co. and the Mobile Light & Railway Co., is locating a line to Magazine Point, and it is reported that construction will begin soon; also that a line south from Monroe Park will be built this winter.

Norfolk, Va.—The Norfolk Railway & Light



Co. proposes to extend its tracks along Church street.

Sumter, S. C.—Application has been made to the city council for a 40-year electric street railway franchise by D. A. Minor, C. W. Wheeler, J. M. Lawrence and L. D. Jennings.

### Machinery, Proposals and Supplies Wanted.

Manufacturers and others in need of machinery of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery needed we will make their wants known free of cost, and in this way secure the attention of machinery manufacturers throughout the country. The MANUFACTURERS' RECORD has received during the week the following particulars as to machinery that is wanted.

Agricultural-Implement Machinery.—See "Stalk-cutter Factory."

Air Compressors.—See "Piping."

Air Pump.—See "Building Material."

Belting.—See "Cotton-gin Equipment."

Boiler.—See "Saw-mill."

Boiler.—See "Cotton-gin Equipment."

Boiler.—See "Engine."

Boiler.—See "Laundry Equipment."

Boiler.—See "Box Machinery."

Boiler.—Morehead Cotton Mills, Spray, N. C., is in market for 150-horse-power high-pressure boiler of the suspension type; will also purchase a slasher.

Box Machinery.—Tryon Folding Box & Carton Co., Tryon, N. C., is in market for box machinery, rollers and engine. Address care of A. D. Beaton.

Building Material.—Little & Phillips, Fitzgerald, Ga., want prices on stone and slate.

Building Material.—George Zapf, West Palm Beach, Fla., wants catalogues and prices of building materials, including roofing, tin, hardware, etc.; also wants to buy one air pump.

Building Materials.—See "Roofing, etc."

Building Materials.—Moore Bros., 416 Nelson Building, Kansas City, Mo., want bids on brick, cut stone, plumbing, slate and metal work for \$50,000 gymnasium.

By-product, Turpentine, etc., Machinery.—J. E. Gantt, Swansea, S. C., wants to correspond with manufacturers of machinery suitable for manufacture of turpentine and other by-products from pine stumps.

Car-loading Machinery.—Reinecke Coal Mining Co., Madisonville, Ky., is in market for a mechanical box-car loader.

Chandeliers.—Rev. W. H. Riser, 169 Wood street, Norfolk, Va., wants prices on combination electrical and gas chandeliers, also slide lights.

Church Organ.—Bids are wanted on organ and pews for church building. Address H. M. Meriwether, corner Sixth and Gladstone streets, Kansas City, Mo.

Church Pews.—See "Church Organ."

Coal Tar.—See "Stalk-cutter Factory."

Cotton-gin Equipment.—J. W. Gentry, Abel, Miss., wants prices on 40-horse-power boiler, 20-horse-power engine, two 70-saw gins, elevator, self-tramping press, shafting and belting.

Cotton Machinery.—Morehead Cotton Mills, Spray, N. C., will buy a slasher.

Cotton-mill Machinery.—Lily Mill & Power Co., John F. Schenck, president, Lawndale, N. C., is now soliciting bids on textile equipment of 5000-spindle mill for Sea Island and Egyptian yarns. Successful bidder for this will probably secure contract for engineering work also. See "Electrical Machinery."

Cotton Press.—See "Cotton-gin Equipment."

Courthouse Furniture and Equipment.—Bids will be opened December 7 for metallic furniture, file boxes and roller book shelves for courthouse. Address Samuel B. George, clerk of court, Lexington, S. C.

Drainage.—W. D. Spencer, president board commissioners Gueydan Drainage District, Gueydan, La., will open bids December 16 for improving drainage in Vermillion parish, Louisiana. For further particulars address the president or J. G. Neelis, secretary.

Dredging.—E. Eveleth Winslow, captain, engineers, engineer office, United States army, Room 2, Custom-House, Norfolk, Va., will open bids December 16 for dredging

waterway from Norfolk harbor, Virginia, to Albemarle sound, North Carolina. Information furnished on application.

Electrical Machinery.—Lily Mill & Power Co., John F. Schenck, president, Lawndale, N. C., is now soliciting bids on electrical machinery in connection with water-power development of 500 horse-power. Plant will be arranged to permit of attaching in the future a 600-horse-power generator at power three miles from first development and there obtaining 1100 horse-power for transmission; also see "Cotton-mill Machinery."

Electrical Supplies.—Norton Coal Co., Norton, Va., wants covered wire inside and outside construction material.

Electric-light Plant.—James C. Rogers, Hartselle, Ala., is in market for complete electric-lighting plant of about 500 lights.

Electric Wiring.—See Building Note under Fort Howard, Md.

Elevators.—Spray Woolen Mills and Rhode Island Co., Spray, N. C., are in market for elevators 5x6 feet for its two-story buildings.

Engine.—See "Saw-mill."

Engine.—See "Cotton-gin Equipment."

Engine.—See "Box Machinery."

Engine.—See "Laundry Equipment."

Engine.—Hoff & Harris, Comanche, Texas, contemplate buying 100-horse-power high-speed automatic engine for electric-light plant.

Engine.—Battley Machinery Co., Rome, Ga., is in market for 80-horse-power tubular boiler and 75-horse-power plain slide-valve engine, both second-hand.

Excelsior Machine.—See "Saw-mill."

Fire Protection.—Rhode Island Company, Spray, N. C., wants bids on fire protection. Address Ladshaw & Ladshaw, Spartanburg, S. C., for specifications.

Flour-mill Machinery.—J. L. Ong, Laclede, Mo., will want sifter for flour mill.

Glass-factory Equipment.—Wheeling Glass Letter & Novelty Co., Wheeling, W. Va., will purchase some glass presses.

Hoisting Equipments.—See "Car-loading Machinery."

Ice Machinery.—See "Refrigerating Machinery."

Irrigation Canal.—Bids will be received at office of G. Bedell Moore, Riverside Building, San Antonio, Texas, until December 10 for construction and completion of the second five miles of an irrigation canal near Del Rio, Texas.

Irrigation System.—L. Burns, Jr., Vicksburg, Miss., is in market for complete irrigation system for 400 acres to lift water twelve feet; also wants plows for making levees, etc.

Knitting Machinery.—Board of Trade, Ben Noyes, secretary, De Funak Springs, Fla., wants information and prices on hand knitting machines for using both wool and cotton yarns.

Laundry Equipment.—F. P. Miller, Columbia, Mo., is in market for complete laundry equipment, including engine and boiler.

Levee Construction.—Bids will be opened December 3 at office of board of commissioners Bossier Levee District, Bossier City, La., for construction of following levee work in parish of Bossier: Bear Point spur, new levee; approximate contents, 10,000 cubic yards; deposit required, \$100; bond, \$500. Ninook bayou, new levee; approximate contents, 20,000 cubic yards; deposit, \$125; bond, \$1000. Swift Chute bayou, new levee; deposit required, \$150; bond, \$1500. Cash or certified check to amount of deposit required must accompany each bid. Usual rights reserved. Other information as to location, character of work, terms of payment and blank forms of proposal may be obtained at office of W. B. McCormick, president, at Shreveport, La., and at office of board of State engineers, New Orleans, La.

Lighting.—Ion Simons, city electrician, Charleston, S. C., will open bids December 21 for lighting streets and public buildings of Charleston with electricity, gas or some other illuminating power. Certified check for \$250 must accompany each bid; \$25,000 bond required and usual rights reserved.

Locomotives.—See "Railway Equipment."

Office Furniture.—See "Courthouse Furniture and Equipment."

Paper-box Manufacturers.—See "Tin-box Manufacturers."

Piping.—Basic Extract Co., Basic City, Va., is in need of wood pipe, iron pipe and fittings, valves and pipe fitting, brass pipe and fittings and one or two air compressors.

Piping.—Henry B. F. Macfarland, Henry L. West, John Biddle, commissioners, Washington, D. C., will open bids November 23 for furnishing 800 tons of eight-inch cast-iron

water pipe. Specifications and blank forms of proposal may be obtained at office of commissioners.

Piping.—S. B. Hutchins, chairman cemetery committee, Portsmouth, Va., will open bids November 30 for supplying Oak Grove Cemetery with 580 feet of three-quarter-inch, 655 feet of one-inch, 70 feet of one-and-one-quarter-inch and 1100 feet of two-inch galvanized-iron pipe; also seven iron hydrants. Bond or certified check for \$100 must accompany each bid. Other information may be obtained from keeper of cemetery.

Planing Mill.—See "Woodworking Machinery."

Planing-mill Machinery.—Homer Lumber & Manufacturing Co., Ltd., J. T. De Loach, manager, Homer, La., will want 10-inch molder, planing-mill edger or rip saw.

Plumbing.—See "Building Material."

Plumbing.—See Building Note under Fort Howard, Md.

Railway Equipment.—See "Car-loading Machinery."

Railway Equipment.—Peninsula Brick Co., Salisbury, Md., is in market for twenty tons 12 to 16-inch T rails delivered Salisbury.

Railway Equipment.—Blue Creek Coal & Land Co., Charleston, W. Va., will later on need railway equipment.

Railway Equipment.—E. Keeler Co., Williamsport, Pa., wants addresses of manufacturers of Shay geared locomotives for lumbering work; will want 50-ton and 30 to 35-ton standard gauge in each case.

Railway Equipment.—Cedar Creek Mill Co., Brewton, Ala., is in market for about four miles of 40-pound new steel rails and three miles of 30-pound new steel rails.

Railway Equipment.—Harper Machinery Co., Park Row Building, New York, N. Y., wants for immediate shipment three miles of 16 or 20-pound rail, one 36 or 42-inch gauge geared locomotive suitable for wood rail, weight eight to twelve tons; also wants to get at once a 36-inch gauge locomotive with 10-inch cylinder, saddle tank, good condition and cheap.

Refrigerating Machines.—X. Y. Z., care Manufacturers' Record, Baltimore, Md., wants two second-hand compression refrigerating machines of thirty-five to forty tons capacity and sixty-five to seventy-five tons capacity.

Road Grading.—Proposals for grading for two and one-half miles of electric railway will be asked for. Parties desiring to bid address Mobile Light & Railroad Co., Mobile, Ala.

Road Machinery.—Gavin Jones & Son, Cawnpore, India, want full information regarding automatic road sweepers, prices, catalogues, etc. They anticipate a demand in India, and want to represent American manufacturers.

Roofing, etc.—Knight Hardware Co., Cartersville, Ga., will want 100 to 200 squares iron siding and roofing.

Sand-washing Machinery.—Clark & Hines, 849 Equitable Building, Baltimore, Md., will place orders for complete sand-washing machinery for capacity of 300 tons a day, and want prices on screens, washers, spiral conveyors, etc.

Saw-mill.—See "Woodworking Machinery."

Saw-mill.—Blue Creek Coal & Land Co., Charleston, W. Va., wants portable saw-mill of about twenty-five horse-power.

Saw-mill.—R. S. Allen, 820 North Forty-first street, Philadelphia, Pa., wants price-lists and catalogues of portable circular saw-mills, capacity 10,000 feet or over; 25-horse-power boiler and engine, edger, excelsior machine, lath saw and shingle machine.

Sewerage Construction.—M. G. Clark, recorder, Ocmulgee, I. T., will open bids December 9 for furnishing material and constructing system of sewerage in accordance with plans and specifications on file. Specifications, instruction to bidders, blank proposals, detail plans and sewer profiles will be on file at recorder's office and at office of engineers, Burns & McDonnell, Postal Telegraph Building, Kansas City, Mo. Each bid must be accompanied by certified check for \$500. Bond required and usual rights reserved.

Shafting.—See "Stalk-cutter Factory."

Shafting.—See "Cotton-gin Equipment."

Shingle Machine.—See "Saw-mill."

Slasher.—See "Boiler."

Stalk-cutter Factory.—R. O. Commander, Florence, S. C., wants prices on drop forging steel blades, spring seats, bolts, castings, rods, iron piping, coal tar, wagon paint, shafting in 42-inch lengths, etc.

Steelworkers.—See "Stalk-cutter Factory."

Sweeping Machines (Road).—See "Road Machinery."

Tank.—Rhode Island Company, Spray, N. C., wants 5000-gallon cypress tank.

Textile Machinery.—See "Cotton-mill Machinery."

Tin-box Manufacturers.—Southwestern Novelty Co., 111 Friscoe street, Oklahoma City, O. T., wants names and addresses of tin-box and paper-box factories.

Vehicle Supplies.—See "Stalk-cutter Factory."

Water-wheels.—See "Electrical Machinery;" also see "Cotton-mill Machinery."

Water-works.—M. G. Clark, recorder, Ocmulgee, I. T., will open bids December 9 for furnishing material and constructing system of water-works, comprising approximately three and one-half miles of distribution system, with necessary hydrants, valves, etc.; also power-house, power plant, pumping machinery, water tower, etc., as per detailed plans and specifications, which may be seen on file at recorder's office and at office of engineers, Burns & McDonnell, Postal Telegraph Building, Kansas City, Mo. Each bid must be accompanied by certified check for \$5000. Bond required and usual rights reserved.

Well-drilling Equipment.—Free Oil & Coal Co., Bearden, Ark., wants prices on machinery for boring for oil.

Woodworking Machinery.—See "Saw-mill."

Woodworking Machinery.—See "Box Machinery."

Woodworking Machinery.—See "Planing-mill Machinery."

Woodworking Machinery.—John L. Ray, Albertville, Ala., wants prices on machinery for stave, saw and planing mills.

### [Continued from Page 366.]

occupants for their energy and a monument to the natural business advantages of the South. About twelve years ago a company was organized for the purpose of manufacturing saws. The enterprise was only moderately successful, and the business was not pushed with vigor, consequently the organizers soon lost interest in the plant. In 1895, however, a new company with new capital and new brains took hold of the old plant, and Isaac S. Boyd was elected president. He was admirably equipped for the work, having acted in a similar capacity for the Boyd & Baxter Furniture Co., one of the successful industries. In 1901 the company elected Ed. L. Humphreys, vice-president, and Frank M. Balsden, secretary and treasurer. These young men have been identified with the company since 1895, having served in various capacities, which has given them a thorough knowledge of the business in all of its details. From 1895 to the present day the Southern Saw Works has grown, forcing aside every obstacle, until today, from that old shack in 1890 has sprung a group of fire-proof buildings and a well-equipped, prosperous factory. Atlanta is especially adapted to manufacturing. Being located at a central distributing point for the South, much time and freight, which is money, are saved in the delivery of goods. For instance, when a saw is wanted it is generally needed immediately, and the saving of even a day or two is a very important item. The saving of freight is certainly something to be considered. The output of the establishment consists of circular saws of every description; its specialty, however, is inserted-tooth circular saws. All the saws are manufactured from crucible steel of the highest quality. The repairing department is also extensive. From all portions of the country come saws of every make—broken saws, burned saws, buckled saws, etc.—to be retouched and made as good as new. Users of saws are informed that the new catalogue of the Southern Saw Works is now ready for distribution.

### Turned and Ground Shafting.

Careful buyers of shafting consider quality as well as price, but some buyers are not careful, and do not consider both. To these two classes some remarks are directed by the Cumberland Steel Co. of Cumberland, Md., manufacturer of turned and ground shafting. This company states that "it is generally known that turned shafting, when properly made, is more desirable, as there is no lamination of the surface of the metal, nor is it subjected to internal strains that cause crystallization and liability to fracture. Taking it for granted that turned shafting is the best, is there any difference in turned shafting? Any first-class mechanic knows that it is almost impossible to turn a shaft perfectly round or parallel, owing to the difference in metal, wear of tools, etc., and if he uses a file to make it true he does not succeed. When necessary to have a perfect surface, he will grind it. That is just what



we do. The advantages of turned and ground shafting are: First, being round and straight, it can be run at a very high speed without heating of journals; second, being very highly polished, it is more attractive in appearance; the surface, being free from lamination, makes it very desirable for piston rods, etc.; third, having no internal strains due to the process of manufacture, it is very desirable where strength is required, preventing accidents, loss of time, money and lives; we have made thousands of tons, and have never known a single instance where one of our ground steel shafts, when properly erected, has broken; fourth, being true to size, couplings, gearings, etc., can be fitted at less cost. Turned and ground shafting includes sizes 1 3/16 to 5 inches in diameter. Sizes smaller than 1 3/16 inches are cold-drawn; larger than 5 inches are turned and polished by special machinery. Our shafting is turned and then ground, making it round, smooth, highly polished and true to size. We own patents on the special machinery used in turning, grinding and straightening, having one of the largest and best-equipped works in the United States. Carrying a large stock of finished and unfinished shafting, we are prepared to fill all orders promptly. Our present capacity enables us to make from 40,000 pounds to 50,000 pounds per day."

#### Crompton-Thayer Loom Co.

The textile trade will be much interested to learn that a new loom company is in the field. It is the Crompton-Thayer Loom Co., Worcester, Mass., formed last spring, and since working steadily to prepare for the market fancy worsted, woolen, silk and cotton looms, dobblies, box motions and kindred parts and mechanisms. The company has adopted the essential and approved mechanism of the various fancy looms mentioned, but in each case has adapted new ideas and improvements which will mark, it is believed, a distinct advance in fancy weaving machinery. These new devices are all in the direction of simplification, and while many of them show great ingenuity, all of the Crompton-Thayer Loom Co.'s improvements, it is claimed, will tend to make the looms easier to keep in operation and easier to repair. The ideas which have been developed will reduce the number of parts hitherto necessary to fancy looms, and thus, while all parts of the looms which usage has shown receive the greatest strain have been reinforced to an unusual degree and regardless of cost, this reduction of parts and the great care taken in designing has made possible the production of looms of great strength, simplicity and symmetry. The company is now ready to take orders for dobblies of any capacity up to thirty harnesses, and the new silk loom, which, after the severest trial in the testing-room, has shown great speed and strength, is now ready for inspection at the works on Cambridge street, Worcester. This loom is of remarkable beauty of design, and its action fulfills the promise of its appearance. Early delivery of plain and dobby silk looms, and also on looms of any width to be run with Jacquards, can be promised. Early in 1904 there will be on exhibition full fancy worsted and woolen looms, which will be ready shortly thereafter in any harness capacity and in any width desired. This new company will soon be incorporated with ample capital. It has been working as a firm, consisting of George Crompton, Edward D. Thayer, William B. Scofield and Randolph Crompton, and they will be directors of the corporation. George Crompton was for several years a director of the original Crompton Loom Works, and later for several years director and treasurer of the Crompton & Knowles Loom Works. Edward D. Thayer has long been known in the woolen trade, and is today one of the largest individual manufacturers of woolen goods in the United States. William B. Scofield was formerly treasurer and general manager of the Worcester Thread Co., which recently sold its business to the Linen Thread Company of America. Randolph Crompton was a director of the old Crompton Loom Works, and later a vice-president, director, member of the executive committee and assistant superintendent of the Crompton & Knowles Loom Works, having active charge for a considerable period of the Crompton works of the combined companies, which employed at that time about 1000 men. Worcester has been the home of the fancy-loom business of America ever since the late George Crompton founded the Crompton Loom Works, more than half a century ago, to build the first fancy power loom, the invention of his father, William Crompton. The skill of Worcester mechanics is unexcelled, and this means that the Crompton-Thayer Loom Co. has an unlimited supply of skilled labor in its particular field upon which to draw, and its

superintendent, designers and foremen are all men who have been trained for years in the loom industry.

#### New Form of Wall Construction.

A new form of wall construction especially adapted to factories, shops and piers is described in the Engineering Magazine for December. This will interest builders, architects, contractors and owners of structures of all kinds containing walls. It is stated that the new form is a substitute for red brick outer-wall construction, which is not only novel, new and cheap in comparison with the ordinary brick wall, but which the manufacturers represent to be actually better, as well as immediately available, for those who have need to substitute it for what has heretofore been used. The American Smelting & Refining Co. about a year ago contracted with Messrs. Henry Maurer & Son, patentees and manufacturers, for a tankhouse 350 feet long by 250 feet wide and 24 feet 6 inches high. The construction consists of hard-burned terra-cotta hollow blocks 4x8x12 inches, forming walls of either four or eight inches thickness; or blocks to suit any thickness of wall desired; "I" beams six, seven or eight inches deep and band-iron No. 13, 1-1/2x1 inch wide; the method as follows: The "I" beams, of lengths corresponding to height of wall, are placed upright and spaced about fifteen feet apart; between the spaces a course of the hollow blocks is laid; on top of every second course a continuous strip of band-iron, fitting in the grooves of the blocks, is laid in Portland cement; the ends of the band-iron riveted to the upright "I" beams. The construction is known as the "Phoenix," and is patented. It is conceded by engineers who have used this method that a "Phoenix" wall four inches thick, with light steel work, is equal in rigidity and strength to one of common brick twelve inches thick, and the weight per square yard of wall of the former being but as 215 pounds to 760 pounds for the latter, one great advantage is at once apparent; hence also it is only essential that the foundations of the "Phoenix" method be solid under the "I" beams, a light one serving for the support of the wall spaces between the upright beams. The factor of safety is ample. Architects allow from five to ten tons per square foot for pressure on masonry, and the "Phoenix" blocks, 4x8x12 inches, placed edgewise and tested by 100,000 pounds "Rehlie" testing machine, showed 53.6 tons to the square foot crushing weight, this factor being further increased by the fact that a square yard of the four-inch "Phoenix" walls weighs but 215 pounds, as against 760 pounds of the common brick one, a difference of considerable weight where freight and cartage enter into computation. The building cost per square yard of the two walls, based on current prices for labor and material in New York, taking, however, \$7.25 per thousand for common brick (a very conservative estimate), common-brick wall is found to cost \$3.55 per square yard and the "Phoenix" one \$2.05. The estimated saving of weight of the tankhouse at the American Smelting and Refining Works was 1,700,000 pounds. After an inspection of that work and several other buildings at Maurer, N. J., the engineers of the Barber Asphalt Paving Co. contracted with Henry Maurer & Son for the erection of the buildings for a new plant. Further information may be obtained from Messrs. Henry Maurer & Son, 420 E. Twenty-third street, New York.

#### TRADE LITERATURE.

##### Cochrane Feed-Water Heaters.

To obtain the full benefits of the heat in exhaust steam, the latter is used for heating water and in heating or drying systems. There have been many devices introduced to utilize this exhaust. The Cochrane Feed-Water Heater is one that has attained a reputation that places it in the front rank of such devices. It is used for heating and purifying water for boiler feed, manufacturing and other purposes, and a brochure giving full details regarding its working has been issued. In this publication are presented the facts that have been demonstrated in actual practice and the Cochrane's advantages are clearly set forth for the consideration of those who are interested in the promotion of economical operations in their establishments. The Harrison Safety Boiler Works of Philadelphia, Pa., manufactures the Cochrane heater, and invites requests for the brochure mentioned.

##### Ingersoll-Sergeant Pneumatic Tools.

Labor-saving tools operated by compressed air have earned a permanent place in the industrial field. Manufacturers, builders of bridges and other structural work, and various operators find pneumatic tools efficient

and economical, and the demand is steadily increasing. The pneumatic tool department recently organized by the Ingersoll-Sergeant Drill Co. has been very successful since its entrance into the market. A second list of the department's products is about to be issued, and an advance copy of same has been received. Photographic illustrations and brief but thorough descriptions are presented of the Ingersoll-Haeseler hammers, also drills, couplings, etc. It is stated that these hammers are novel and entirely different from other tools of like character, being the first to employ a valve mechanism having a radial movement. The means of locking the parts of the tool together is also fundamental in its application. Prospective buyers of pneumatic tools are not fully informed until they examine the Ingersoll-Sergeant publications. Write the company at its New York offices, Havemeyer Building, 26 Cortlandt street.

#### Modern Steam Traps.

Modern steam traps drain the condensation from steam pipes, coils and apparatus employed in steam heating, steam kettles, vacuum pans, mash kettles, steam engine supply pipes and separators, evaporating pans, steam jackets on engines and pumps, ice machine stills, etc. These traps meet a demand from steamfitters and engineers in all parts of the country. The steam traps manufactured by the Nason Manufacturing Co. are well known. They have always enjoyed a reputation ranking them with the best products of their class, and are a standard of excellence with many engineers and steamfitters. The Nason traps are divided into two groups—one for ordinary working steam pressure of seventy pounds and less, and the other for pressures above seventy-one pounds and less than 150 pounds. The Nason is the trap for the lower pressures and the Sidelug for the higher. A descriptive pamphlet, now ready for transmission to inquirers, tells all about the features of the Nason and Sidelug steam traps, their manufacture, their efficiencies and other points of merit. Write the company at its main offices, 21 Fulton street, New York, for particulars.

#### Concerning Storage Batteries.

The use and care of storage batteries is a subject in which thousands of persons are interested. Those who are connected with electrical industries and conversant with them are well aware that storage batteries have been so perfected during recent years as to be remarkably efficient. The Columbus Storage Battery Co. of Columbus, Ohio, has made a specialty of electric storage batteries, and its success in this direction has been very marked. It has issued its third annual catalogue, reproducing a short treatise on the "Use and Care of Storage Batteries" from its previous catalogue, which was commented on very generally by the electrical press. The company installed a large number of batteries in private lighting plants during the past year, and is thus enabled to give prospective buyers detailed information in regard to particular installations. Columbus Storage Batteries have found a ready market in the telephone trade, and types used for ignition on stationary and automobile gasoline engines have also been in great demand. Small cells of every description are made a specialty by this company; offices at 97 N. Third street, where requests for further information can be addressed.

#### A Cement Edition.

A special cement edition has been issued recently by the Western Miner and Financier of Denver, Col. This publication contains a quantity of valuable data concerning the use of Portland cement in all kinds of construction work, as seen throughout the United States at the present time. There is a constantly-increasing demand for Portland cement, because of its usefulness. It can be readily handled, and when mixed with water will take the form of any space which it is to occupy, and there become rock-like in character, hard and compact, so as to resist the forces of decay. These qualities have long been known to architects, contractors, builders and others, but it has only been within comparatively recent years that there has been such a general use of Portland cement in construction work. The publication mentioned above contains a number of interesting articles prepared by experienced men. Cement as the structural basis of American architecture is spoken of by Walter L. Rice, architect, while illustrations and descriptions are presented showing the giant strides of the American cement industry, armored concrete skyscrapers, the art of perfect stonemaking, the corrosion of steel, how Portland cement is made and various other interesting treatises, including "In the Cement Age," by Charles Catlett, repro-

duced from a recent issue of the Manufacturers' Record.

#### Engine-Type Generators.

The extended use of engine-type generators for an almost unlimited variety of industries has introduced to the designer and builder many opportunities for improvement in design and construction. Natural development of any piece of apparatus in general use tends to result in a constantly-improving product. Repeated tests of similar machinery furnish data of assistance in refining original designs. Occasional special rigid requirements develop devices and designs in minor details which eventually prove of value in improving standard construction or design. The large field of users supplied by the Fort Wayne Electric Works has resulted in the development by that company of a line of direct-connected, direct-current generators exceptionally adapted to operation under extremely varied conditions. Mechanical details and refinement of electrical design have been given special attention by an experienced force of engineers, and the requirements of actual service have been very successfully met in type M P L direct-connected generators. The continued satisfactory operation of this type during the past several years has demonstrated that the designs and construction are correct. The improvements and modifications suggested by experience and incorporated in the present machines is a guarantee of their future satisfactory operation. These machines form the subject of Bulletin No. 1050 issued by the Fort Wayne company. It gives a thorough description, accompanied by photographic illustrations showing some very large machines that have been built for well-known users. Copies of the bulletin are supplied by the Fort Wayne Electric Works, Fort Wayne, Ind.

#### Incandescent Lamp Suggestions.

The uniformity of service which incandescent lamps will render depends largely upon the care taken in making the initial selection for candle-power and current consumption. This is because a wide variation in candle-power and voltage means a doubly wide range in efficiency, and the life of a lamp is greatly affected by the efficiency with which it burns. The poor economy of using lamps after they have fallen below their initial candle-power is a very important fact, and one that is too frequently overlooked. Most lamps consume very nearly the same amount of current throughout their life, yet the candle-power is constantly diminishing. Electricians have, therefore, determined that there is true economy in frequent renewals of lamps. Lamps for use on a given lighting circuit should be absolutely uniform and suited to the circuit in order that they be used at their greatest commercial economy. The question of distribution of light from a lamp is also a matter which should not be overlooked. The purpose of lights is to illuminate as uniformly as possible the space in which they are placed. For this reason incandescent lamps are used to illuminate all but the largest interiors. The maker of the Sawyer-Man lamps has the benefit of twenty-four years of continuous experiment and experience in the production of incandescent lamps. During this time technical processes have been perfected and a system of factory management evolved, so that no lamp can leave the works without being perfect in every detail. A brochure embodying suggestions for those who use incandescent lamps, and telling how to obtain the highest possible results, is now being distributed. Copies of this publication can be obtained by addressing the Sawyer-Man Electric Co. of New York, offices at 510 W. Twenty-third street; or, address the nearest office, Empire Building, Atlanta; Scollard Building, Dallas, Texas; Continental Trust Building, Baltimore; National Bank of Commerce Building, St. Louis.

The Chesapeake Transit Co., according to a report at Norfolk, Va., will double-track its line and make other improvements. It is rumored that the Norfolk & Western Railway has either bought the road or obtained an interest in it. J. E. Cole is general counsel of the company. The line is twenty-five miles long, of standard gauge, and connects Norfolk, Cape Henry and Virginia Beach.

The Virginia Bridge & Iron Co. of Roanoke, Va., has received a request from the Chinese government to make a bid for the construction of a \$25,000 bridge at Shanghai.



SYNOPSIS OF THE  
**ANNUAL REPORT**  
OF THE  
**Louisiana & Arkansas Railway**  
FOR THE YEAR ENDED JUNE 30, 1903.

The Louisiana & Arkansas Railway at the beginning of the fiscal year 1903 extended from Stamps, Ark., on the St. Louis Southwestern Railway, to Winnfield, La., a distance of 125 miles. Within the year the railroad was carried northward from Stamps to Hope, Ark., 23 miles, making 148 miles in operation at the close of the year, June 30, and an extension in a southeasterly direction from Winnfield to Jena, La., 39 miles, was undertaken. The line from Stamps to Hope was completed and opened for business on June 1, 1903. The chief object in building to Hope was to establish connections with the St. Louis, Iron Mountain & Southern Division of the Missouri Pacific Railway System and with the Rock Island-Frisco System. The extension gives the Louisiana & Arkansas increased competition for the profitable traffic that it controls for delivery to other companies, and the value of this additional mileage is demonstrated already. The St. Louis, San Francisco & New Orleans Division of the Rock Island-Frisco System should be completed into Hope by December 1, 1903, at the latest. The extension has opened a valuable farming country, which should yield considerable traffic. Hope, the northern terminus of the railroad, is a town of about 4000 inhabitants and is the center of a large farming country. It has many industries.

The alignment of the Hope extension is excellent, the maximum curve being two degrees and the maximum grade is 1 per cent. At Hope a good site was obtained for a yard, which has been laid out. The Company probably will unite with the St. Louis, Iron Mountain & Southern Railway and with the Rock Island-Frisco System in building a joint passenger station. Independent connections with both of these systems have been made for the transfer of freight.

The southeasterly extension of the railroad from Winnfield to Jena, La., via Georgetown is now well under way, and according to contract should be finished by January 1, 1904. From Winnfield to Georgetown the distance is 22 miles; from Georgetown to Jena, 17 miles. The grading is 90 per cent. completed, and the rails are being laid rapidly. This extension traverses a region heavily timbered with a virgin growth of long-leaf pine. Most of this timber is owned by the same persons that own the railway. No special difficulties have been encountered in the construction. A further extension from Jena eastward to Natchez, Miss., 47 miles, is projected.

Much work has been done during the past year in improving the physical condition of the property. The betterments have included, among other things, the ballasting of a considerable mileage with cement gravel and the laying of heavier rails on the northern end of the line. When this work is finished the road will have 75-pound steel rails from Hope, Ark., to Sibley, La., 84 miles. Three important revisions of location were undertaken to shorten the line and to reduce the grades and curves.

The Company contracted during the year for eight new 70-ton locomotives, of which two have been delivered, and also added to its rolling stock 3 passenger cars, 2 combination cars, 97 box cars, 200 flat cars, 3 cabooses and 3 boarding cars.

The country served by the road is experiencing much greater prosperity than it has previously known. In the last eighteen months many of the towns have doubled their population. At Winnfield, La., an oil well is being drilled, with favorable indications. The State geologist of Louisiana reports the formation to be the same as at Beaumont, Texas.

The authorized capital stock is \$7,000,000, of which \$2,250,000 was outstanding on June 30, 1903, and \$2,625,000 is now outstanding.

The Company's First Mortgage authorizes the issue of \$7,000,000 of 5 per cent. 25-year gold bonds for refunding purposes, for the construction of extensions, for the purchase of rolling stock and to provide for improvements.

Within the year \$864,000 of bonds in the treasury were sold and the proceeds were expended for construction purposes, and additional bonds, amounting to \$408,000, were issued, at the rate of \$18,157 per mile of new railroad, on account of the extension from Stamps to Hope, and bonds amounting to \$208,000 were issued for new rolling stock and improvements. The total amount of bonds thus issued in 1903 was \$616,000, and the total outstanding at the close of the fiscal year was \$2,116,000. Since July 1, 1903, bonds to the additional amount of \$333,000 have been issued, making the present aggregate issue \$2,449,000, or the equivalent of \$16,600 per mile of completed road.

The income accounts of the fiscal years ended June 30, 1901, 1902 and 1903, respectively, are compared in the following statement:

	1903.	1902.	1901.
Average Miles Operated.....	127.17	97	91.8
Gross Earnings.....	\$532,534	\$478,531	\$316,745
Operating Expenses and Taxes.....	371,706	295,574	198,270
Net Earnings.....	\$160,828	\$182,957	\$118,475
Other Income.....	17,842	.....	.....
Total Net Income.....	\$178,670	\$182,957	\$118,475
Interest .....	70,027	33,001	15,618
Surplus .....	\$108,643	\$149,956	\$102,857

On the present funded debt the annual interest charge at 5 per cent. is \$122,450. This sum is equivalent to 68.53 per cent. of the net income applicable to interest in the fiscal year 1903. The annual interest charge on the funded debt is equal to \$830 per mile of road now in operation, as against net income available for interest amounting to \$1405 per mile operated in 1903 and \$1645 per mile as the average of the last two years.

Earnings have shown continuous gains for several years. Comparing 1903 with 1902, the earnings of the passenger department increased about 41 per cent., those of the freight department about 9 per cent., and total earnings more than 11 per cent. The proportion of other freight than forest products to the total tonnage was somewhat greater than the previous year.

Freight earnings averaged 1.83 cents per ton per mile, or the same as in 1902, and passenger earnings averaged 2.85 cents per passenger per mile, as compared with 3.10 cents the year before.

The property was duly maintained out of its earnings through charges to operating expenses. The amount expended for maintenance of way and structures, including reserve funds charged to operating expenses and set aside for renewals of rails and ties, was equivalent to \$921 per average mile of road operated, as against \$1017 per mile in 1902.

All freight cars, except skeleton logging cars, are provided with automatic couplers and air brakes, and all of the equipment is in good condition. The amounts charged to operating expenses for repairs and renewals of rolling stock averaged per locomotive \$820 in 1902 and \$1039 in 1903; per passenger train car \$349 in 1902 and \$474 in 1903, and per freight and work car \$31 in 1902 and \$26 in 1903.

With an increase of 8.80 per cent., from 23,608,151 to 25,685,740, in the number of tons of revenue freight carried one mile, the revenue freight train mileage increased 5.37 per cent., and the average trainload of revenue freight increased 3.14 per cent. In 1902 the average freight trainload was 159 tons; in 1903, 164 tons. Including Company freight, the trainload of 1903 was 174 tons, as against 161 tons the year before. Freight earnings per freight train mile averaged \$2.99, as compared with \$2.91 in 1902, an increase of 3.06 per cent.

Passenger train earnings per passenger train mile averaged 76 cents in 1903, as compared with 57 cents the previous year, a gain of 34 per cent. The average number of passengers per train increased within the year from 16 to 23. The gain in the number of passengers carried one mile was 56 per cent.

COMPARATIVE GENERAL BALANCE SHEET.

ASSETS.		LIABILITIES.	
	June 30, 1903.		July 1, 1902.
Cost of road.....	\$3,593,326 33	Capital stock.....	\$2,250,000 00
Cost of equipment.....	525,854 24	First mortgage bonds.....	1,500,000 00
Total cost of road and equipment.....	\$4,119,180 57	Total capital liabilities.....	\$3,750,000 00
Material and supplies.....	197,667 96	Equipment contract (contra).....	.....
First mortgage bonds in treasury.....	.....	Audited vouchers.....	\$55,246 43
Total capital and invested assets.....	\$4,316,848 53	Unpaid wages.....	26,678 29
Equipment under contract (contra).....	.....	Due individuals and companies.....	9,415 89
Cash on hand.....	\$324,559 46	Agents' drafts in transit.....	390 07
Cash in transit.....	6,763 66	Unpaid coupons.....	300 00
Cash with financial agents.....	300 00	Accrued interest on bonds.....	35,266 65
Due from agents and conductors.....	2,258 64	Accrued taxes.....	4,000 00
Due from individuals and companies.....	58,436 54	Loans and bills payable.....	20,000 00
Unexpired insurance.....	1,402 66	Due stockholders of old company in liquidation.....	59,000 00
Total working assets.....	393,750 96	Miscellaneous reserves.....	3,162 78
Total assets.....	\$4,710,593 49	Due trustee of first mortgage.....	695 00
		Total working liabilities.....	135,455 21
		Miscellaneous reserves.....	102,112 99
		Profit and loss, surplus.....	107,031 29
		Total liabilities and surplus.....	\$3,482,577 87

# SIXTY-NINTH ANNUAL REPORT OF THE ATLANTIC COAST LINE RAILROAD COMPANY.

Richmond, Va., November 17, 1903.

To the Stockholders of Atlantic Coast Line Railroad Company:

The Atlantic Coast Line Railroad Company, a corporation having a Virginia charter, and also corporate powers under the laws of the several States in which it owns lines of railway, went into possession on the 1st day of July, 1902, of the property acquired by consolidation with the Savannah, Florida & Western Railway Company. At the same time it went into possession of the St. Johns & Lake Eustis Railroad, which it had acquired by purchase from the Company of that name, and also of the Sanford & Lake Eustis Railroad and of the Florida Midland Railroad, which it acquired by purchase from the owner of the same.

The stocks of the Florida Southern Railroad Company and of the Sanford & St. Petersburg Railroad Company were acquired by this Company and the properties of said Companies were conveyed to it. While such consolidation only became effective April 1, 1903, the accounts representing the earnings and operating expenses of the Florida Southern Railroad Company and Sanford & St. Petersburg Railroad Company from July 1, 1902, to March 31, 1903, were taken up on the books of this Company, so that the statements incorporated in this report include the three Companies and the operations of 4138.87 miles of railroad.

The Florida Southern Railroad Company owned and operated at the time of the consolidation about 243 miles of road, consisting of the line of railway extending from Palatka, Fla., to Gainesville, Fla., and to Fitzgerald, Fla., and Brooksville, Fla., and the line from Bartow, Fla., to Punta Gorda, Fla., at all of which points, except the last named, said lines of railway had connection with those of the Atlantic Coast Line Railroad Company.

The Sanford & St. Petersburg Railroad Company at the time of the consolidation owned and operated the line extending from Sanford, Fla., to St. Petersburg, Fla., a distance of about 153 miles, and connecting with the Atlantic Coast Line at Sanford and Trilby.

At the time the Florida Southern Railroad Company was consolidated with the Atlantic Coast Line Railroad Company the former had under construction a line from Punta Gorda to Fort Myers, a distance of about twenty-eight miles, which it is expected will be completed and in operation early in the year 1904.

A line from a point in Decatur county, Georgia, near Climax, on the railway between Climax, Ga., and Chattahoochee, Fla., was partially constructed in the fiscal year covered by this report, and is now in operation to Amsterdam, Ga., a distance of 10.5 miles.

The Company has not now under construction any other lines.

## MILEAGE.

Lines owned.....	3,990.26
Lines operated under lease or agreement for trackage, etc.....	139.61
Total.....	4,138.87

The railways of the Atlantic Coast Line join those of the Louisville & Nashville Railroad Company at Chattanooga Junction, Fla., and Montgomery, Ala. The two Companies are the joint lessees of the Georgia Railroad. For years they have interchanged business with each other on a large scale, and have been operated as connecting lines and allies. Under these circumstances it was deemed of first importance by the stockholders and directors of the Atlantic Coast Line Railroad Company that such interchange of business should be permanently secured, and it was considered that this could be accomplished in no other way as completely as by the acquisition by this Company of a majority of the stock of the Louisville & Nashville Railroad Company. The stockholders of this Company by a vote representing 91 per cent. of all the stock then outstanding, and being all the shares represented at the meeting, on November 17, 1902, approved the purchase of 306,000 shares out of a total of 600,000 shares of the stock of the Louisville & Nashville Railroad Company. These shares have been pledged as collateral for an issue of \$35,000,000 of bonds made by this Company, bearing date November 1, 1902, payable October 1, 1952, and carrying interest at the rate of 4 per cent. per annum from October 1, 1902, payable the 1st days of May and November. These bonds, together with \$5,000,000 in the stock of this Company and \$10,000,000 in cash, were paid as the consideration for the 306,000 shares of Louisville & Nashville stock. Surplus profits of the Company have since been applied to the cost of this stock, by which its book value has been reduced to \$45,554,220.58.

The mileage of the Louisville & Nashville Railroad Company owned and operated, or leased and controlled solely or jointly with other lines, on June 30, 1903, aggregated 6132.15. Its net earnings from operations and income, after paying all taxes, leases and fixed charges, were \$6,211,047.74, from which was paid to stockholders, in two semi-annual dividends of 2½ per cent. each in August and February, \$3,000,000, leaving a net surplus of \$3,211,047.74, all of which, however, was invested by the Board of Directors in additions to its equipment and property.

## INCOME ACCOUNT.

Gross earnings from operation.....	\$19,682,455 60
Operating expenses and taxes.....	12,612,336 59
Net income from operations.....	\$7,070,119 01
Other income.....	1,152,952 34
Total income.....	\$8,223,071 35
Interest and rentals.....	5,207,982 48
Miscellaneous deductions from income.....	\$3,015,088 87
Net income.....	\$2,993,028 27
Dividends:	
Declared November 17, 1902, payable January 10, 1903, 2½ per cent. on \$28,150,000 common stock.....	\$703,750 00
Declared June 25, 1903, payable July 10, 1903, 2½ per cent. on \$36,650,000 common stock.....	916,250 00
Declared September 23, 1902, payable November 10, 1902, 2½ per cent. on \$2,015,500 preferred stock.....	50,472 50
Declared April 21, 1903, payable May 10, 1903, 2½ per cent. on \$1,744,100 preferred stock.....	43,602 50
Net surplus for year.....	\$1,278,963 27
Earnings from operation increased 11.58 per cent.	
Operating expenses and taxes increased 8.22 per cent.	
Net income from operations increased 18.13 per cent.	

In "Other Income" is included the six months' dividend of 2½ per cent. on the Louisville & Nashville Railroad Company stock owned by this Company which was paid in February, 1903, while "Interest and Rentals" include nine months' interest to June 30, 1903, on the entire issue of \$35,000,000 of bonds secured by the Louisville & Nashville stock as collateral.

The ratio of operating expenses and taxes to gross earnings from operations was 64.08 per cent.

## CAPITAL ACCOUNT.

The common stock of the Company outstanding on July 1, 1902, amounted to \$23,150,000. Fifty thousand shares were issued in part payment for 306,000 shares of Louisville & Nashville stock, and 85,000 shares were sold at \$125 per share to provide the cash payment made on the same account, so that the outstanding common stock of the Company amounted at the close of the fiscal year to \$36,650,000.

On July 1, 1902, the Company had outstanding \$18,850,000 of 5 per cent. non-cumulative preferred stock, of which \$17,105,900 were, by June 30, 1903, converted into 4 per cent. Certificates of Indebtedness of the Company at the rate of 100 per cent. of stock for 125 per cent. of Certificates. There were outstanding on the 30th of June, 1903, \$1,744,100 of preferred stock.

There were outstanding on the 30th of June, 1903:

7 Per Cent. Certificates of Indebtedness of the Wilmington & Weldon Railroad.....	\$17,100
4 Per Cent. Certificates of Indebtedness of the Atlantic Coast Line Railroad Company (of the issue of 1900).....	22,400
New 4 Per Cent. Certificates of Indebtedness of the Atlantic Coast Line Railroad Company (amount authorized \$25,000,000).....	21,382,300

Mention was made in the annual report of the Company to the stockholders for the year ended June 30, 1902, of the consolidated mortgage of the Company to secure an issue of bonds not to exceed \$80,000,000. The amount of bonds secured by this mortgage outstanding on June 30, 1903, was \$34,809,000.

Steps were taken in this fiscal year for paying, on January 1, 1904, \$1,500,000 St. Johns River Division Bonds of the Savannah, Florida & Western Railway Company under the right reserved in the mortgage securing said bonds. When said bonds have been paid the consolidated mortgage will have a first lien on 124 additional miles of railway, which will make it a first lien on about 713 miles.

The entire bonded debt having a lien on the railways owned by the Company amounted on June 30, 1903, to \$72,549,275, or \$18.146 per mile of railway owned by the Company, and the fixed charges resulting from such bonded debt amounted to \$3,059,227.63 per annum, or \$765 per mile of railway owned by the Company.

The Company has no floating debt, and has no equipment trust obligations outstanding except the amount of \$136,666.65 which it became liable to pay by reason of consolidations with other Companies, and which amount is being paid at the rate of \$40,000 per year.

## MAINTENANCE OF WAY AND STRUCTURES.

The charge to this account during the year amounted to \$2,995,369.50, an increase of \$271,126.95, or 9.95 per cent., over the preceding year.

Six thousand and twenty-seven and five one-hundredths tons of new steel rail (70 and 80 pounds to the yard) were laid, making 50,823 miles of track laid.

One million five hundred and sixteen thousand nine hundred and six cross-ties were used in renewal.

One hundred and five thousand nine hundred and one cubic yards of gravel ballast were placed in the track.

Fifty-nine and one-third miles of new side tracks and spurs were constructed and fifteen miles were taken up, making a net increase during the year of forty-four and one-third miles.

The charge to repairs and renewal of buildings and fixtures amounted to \$438,291, an increase of \$89,880, or 25.8 per cent., over the preceding year.

## MAINTENANCE OF EQUIPMENT.

The charge to this account was \$2,153,309.00, a decrease of \$6189.98, or 29-100 of 1 per cent., as against the preceding year.

Sixteen new locomotives were added at a cost of \$203,858, of which nine replaced the same number of old locomotives sold, and seven were charged to New Equipment. The Company owned 451 locomotives at the end of the year. All the locomotives and passenger coaches of the Company are equipped with automatic couplers and air brakes.

One thousand two hundred and fourteen new freight cars were purchased or built at the Company's shops during the year at a cost of \$683,384.18, of which 291 took the place of the same number of freight cars destroyed, and 923 were charged to New Equipment. Freight train equipment at the close of the year consisted of 13,631 standard-gauge cars and 41 narrow-gauge cars. All freight cars of the Company are equipped with automatic couplers, and 82.9 per cent. of them are equipped with air brakes.

The passenger train equipment at the close of the year consisted of 496 standard-gauge cars and 6 narrow-gauge cars.

Road service equipment consisted of 399 cars.

## CONDUCTING TRANSPORTATION.

The charge for Conducting Transportation amounted to \$6,194,359.07, an increase of \$577,313.09, or 10.28 per cent., over the preceding year. The principal causes of increase were rise in the price of fuel, increased wages of employees and large increase in tonnage handled.

## TONS FREIGHT AND NUMBER PASSENGERS CARRIED.

Tons of freight carried.....	7,674,271
Average amount received for each ton freight.....	\$1 83
Number of passengers carried.....	3,728,033
Average amount received from each passenger.....	\$1 03

## PER MILE OF ROAD.

Miles of road operated.....	4,138.87
Receipts from freight.....	\$5,330 78
" " passenger.....	326 55
" " passenger train service.....	1,298 48
Gross earnings from operations.....	4,755 51
Operating expenses.....	2,877 69
Net receipts.....	1,877 84

## CARRIED ONE MILE.

Tons freight carried one mile.....	1,068,277.14
Average rate per ton per mile.....	.013
Number of passengers carried one mile.....	157,075.47
Average rate per passenger per mile.....	.004

## PER TRAIN MILE.

Mileage of revenue freight trains.....	5,905,291
" " " passenger trains.....	4,997,740
" " " mixed trains.....	780,434

Total revenue train mileage.....	11,683,565
Mileage of non-revenue trains.....	382,323

Total train mileage.....	12,065,888
Receipts from freight per freight train mile.....	\$2 10
" " " passenger per passenger train mile.....	.06
" " " passenger train service per passenger train mile.....	.07
Gross earnings from operation per mile of train earning revenue.....	1 08
Operating expenses per mile of train earning revenue.....	1 02
Net earnings per mile of train earning revenue.....	.06

## GENERAL EXPENSES.

The amount charged to this account was \$567,298.42, an increase of \$71,964.50, or 14.53 per cent., caused principally by increase in amount of insurance carried and in rate of premiums paid, and by expenses incident to the issue of 4 Per Cent. First Consolidated Mortgage Bonds.

On the 3d day of July, 1903, Dr. D. W. Lassiter, for so many years connected with the properties of this Company as one of its Directors, departed this life at



Petersburg, Va., and the following preamble and resolutions were adopted by the Directors of the Company:

"On the morning of July 3, 1903, Dr. Daniel William Lassiter died at his home in the city of Petersburg, Va.

"Dr. Lassiter was first elected a member of the Board of Directors of this Company, then the Richmond & Petersburg Railroad Company, on October 27, A. D. 1866, and was continuously a Director of the Company from that date up to the time of his death, covering a period of nearly thirty-seven years, and was, therefore, the immediate associate in the Directory of this Company of each of us. We can speak of him, therefore, from an intimate personal association.

"In his official position he was always faithful to the duties imposed upon him by the trust, and was conspicuously intelligent and wise in the discharge of the same.

"In his personal character he was honest, straightforward, candid and pure-minded, and endeared himself strongly to all who enjoyed the benefit and privilege of association with him.

"He rose to the highest rank in his profession and enjoyed the unlimited confidence and affection of those—and their name was legion—who had the good fortune to enjoy the benefit of his professional counsel and attention. It is

"Resolved, That this Board has heard with profound and sincere regret of the death of Dr. Daniel William Lassiter, and desires there shall be placed upon its record this slight tribute to his memory as a man beloved and admired for his splendid qualities as an official of this Company and as a dear friend.

"Resolved further, That this Board and each member thereof hereby extends its warmest sympathies to his bereaved family, and the Secretary hereby is directed to transmit to them a copy of these resolutions."

Reference is made to the report of Mr. J. R. Kenly, the Fourth Vice-President and General Manager, and to the statements attached as a part of this report.

The Company acknowledges the faithful and efficient services performed by its employes during the fiscal year covered by this report.

Respectfully submitted,

H. WALTERS, Chairman.  
R. G. ERWIN, President.

### GENERAL MANAGER'S REPORT.

The following tables will show the comparison with last year:

OPERATING EXPENSES.				
	Maintenance of way and structures.	Maintenance of equipment.	Conducting transportation.	General expenses.
Year ending June 30, 1903.....	\$2,965,369 50	\$2,153,309 60	\$6,194,359 07	\$567,298 42
Year ending June 30, 1902.....	2,724,242 55	2,159,499 58	5,617,045 98	495,333 92
Increase.....	\$271,126 95		\$577,313 09	\$71,964 50
" per cent.....	9.95		10.28	14.53
Decrease.....		\$6,189 98		
" per cent.....		.29		

PASSENGER.			
	Revenue.	Number.	
Year ending June 30, 1903.....	\$3,334,868 06	3,728,033	
Year ending June 30, 1902.....	3,841,482 57		
Decrease.....	\$6,614 51		
" per cent.....	.17		

FREIGHT.			
	Revenue.	Tons.	
Year ending June 30, 1903.....	\$14,046,394 95	7,674,271	
Year ending June 30, 1902.....	12,001,931 94		
Increase.....	\$2,044,463 01		
" per cent.....	17.03		

MILEAGE.				
	Tons one mile.	Passengers one mile.	Revenue train mileage.	
Year ending June 30, 1903.....	1,068,277,144	157,075,477	11,683,565	
Year ending June 30, 1902.....	924,227,871	156,987,395	11,260,885	
Increase.....	144,049,273	88,082	422,680	
" per cent.....	15.59	.06	3.75	
Passenger train mileage decreased.....		.39 per cent.		
Freight train mileage increased.....		0.92		

The mileage operated at the close of the year was 4138.87 miles, the same as at the close of the previous year.

For convenience of operation the System has been divided into two Divisions, the dividing line being at Central Junction, Savannah. The lines north of that point comprise the First Division, and the lines south thereof comprise the Second Division. These Divisions are subdivided into Districts.

### MAINTENANCE OF WAY AND STRUCTURES.

The charge to Maintenance of Way and Structures amounted to \$2,965,369.50, against \$2,724,242.55 for the preceding year, an increase of \$271,126.95, or 9.95 per cent.

#### STEEL RAIL.

743.6 tons of new steel rail were laid on the First Division and 528.6 tons on the Second Division, a total of 6027.2 tons, as follows:

First Division:			
Richmond District, 70-pound Rail.....	1.76 miles of track.		
Norfolk District, 70-pound Rail.....	1.85 " " "		
Charleston District, 70-pound Rail.....	3.15 " " "		
	6.76 " " "		

Second Division:			
Savannah District, 70-pound Rail.....	629 miles of track.		
Jacksonville District, 70-pound Rail.....	13.730 " " "		
Montgomery District, 80-pound Rail.....	12.440 " " "		
Jesup Short Line, 80-pound Rail.....	17.024 " " "		
	43.823 " " "		

Total miles of new steel rail laid on both Divisions, 50.583 miles.

One mile of new 70-pound steel rail was sold to the Charleston & Western Carolina Railway Company.

At the close of the year there was on hand on the First Division 221.94 tons of new 70-pound steel rail, and on the Second Division 2123.33 tons of new 80-pound steel rail, and due from the Pennsylvania Steel Company 3150 tons of 70-pound steel rail and 3160 tons of 80-pound steel rail, making a total of 8655.27 tons of new steel rail on hand and due at the close of the year.

There was charged to Operating Expenses on account of Renewal of Rails \$234,684.

#### CROSSTIES.

The number of crossties used in renewals was 1,516,906, as follows:

	First Division.	Second Division.
Main track.....	420,184	988,023
Side tracks.....	67,659	41,040
	487,843	1,029,063

#### LUMBER.

The number of square feet of lumber used in renewals and new work was 14,350,800 square feet, as follows:

First Division.	Second Division.
5,957,749 square feet.	8,393,051 square feet.

#### BALLAST.

There were 105,901 cubic yards of new gravel ballast placed in the track, as follows:

First Division.	Second Division.
70,119 cubic yards.	27,282 cubic yards.
	8,500 " "
	35,782 " "

### SIDE TRACKS.

New side tracks were constructed as follows:

	On First Division.	On Second Division.
Tracks to industries.....	8.035 miles.	4.670 miles.
Station, Yard and Pass Tracks.....	15.273 " "	31.150 " "
Side tracks taken up.....	23.308 " "	35.850 " "
Net increase.....	20.458 " "	24.167 " "

### SUMMARY.

Tracks to industries.....	12.705
Station, yard and pass tracks.....	46.453
Side tracks taken up.....	59.158
Net increase.....	14.533
	44.625

The capacity of the tracks in the receiving yard at South Rocky Mount was increased from 43 to 60 cars each.

The charge to Repairs and Renewals of Buildings and Fixtures was \$438,201, against \$348,411 for the previous year, an increase of \$89,880, or 25.8 per cent.

The charges to Maintenance of Equipment were \$2,153,309.60, against \$2,150,499.58 for the preceding year, a decrease of \$6189.98, or .29 per cent.

### GENERAL BALANCE SHEET, JUNE 30, 1903.

ASSETS.	
Property, Construction and Equipment.....	\$127,255,911 01
306,000 shares Louisville & Nashville R. R. Co. Stock.....	45,554,230 58
Atlantic Coast Line R. R. Co. First Con. 4 per cent. Bonds.....	2,244,575 00
Other investments.....	191,408 40
Atlantic Coast Line R. R. Co. of S. C., 4 per cent. Bonds deposited with Farmers' Loan & Trust Co.....	500,000 00
Bonds deposited with Safe Deposit & Trust Co. for Equipment.....	500,000 00
Reserve Fund—Cash on deposit for renewals of rails.....	249,098 54
Trust Equipment.....	136,666 65
Material and supplies.....	708,725 15
Current Assets:	
Cash on deposit and in hands of Treasurer.....	\$1,397,314 56
Cash deposited for coupons.....	500,348 69
Agents' Balances.....	522,659 15
Due by other Companies and Individuals.....	5,365,770 51
Deferred Assets:	
Unadjusted Claims in hands of Freight Claim Agent.....	242,426 99
Interest Receivable.....	63,967 49
	306,394 48
Total Assets.....	\$185,433,492 72
LIABILITIES.	
Capital Stock:	
Preferred.....	\$1,744,100 00
Common.....	35,659,000 00
Common Class "A," Richmond & Petersburg R. R.....	991,000 00
Certificates of Indebtedness:	
New Certificates of Indebtedness, 4 per cent.....	\$21,382,300 00
Certificates of Indebtedness, Old 4 per cent.....	22,400 00
Certificates of Indebtedness W. & W. R. R., 7 per cent.....	17,100 00
	21,421,800 00
Bonded Debt secured by Mortgages on Railroads.....	72,569,275 00
Louisville & Nashville R. R. Collateral 4 per cent. Bonds.....	35,000,000 00
Trust Equipment Obligations.....	136,666 65
Current Liabilities:	
Audited Vouchers and Pay-Rolls.....	\$1,111,651 32
Due to other Companies and Individuals.....	874,365 27
Unclaimed Wages.....	28,426 16
Coupons due and unpaid.....	505,588 63
Dividends declared, unpaid.....	926,879 25
Deferred Liabilities:	
Bond Interest Accrued, not due.....	\$869,893 32
Taxes Accrued, not due.....	484,391 31
	1,354,284 63
Reserves for Betterments and Improvements.....	1,645,478 40
Profit and Loss—Surplus.....	11,464,977 41
Total Liabilities.....	\$185,433,492 72

### INCOME ACCOUNT FOR THE YEAR ENDING JUNE 30, 1903.

Gross Earnings:	
Freight.....	\$14,046,394 95
Passenger.....	3,334,868 06
Express.....	529,758 31
Mail.....	600,321 39
Miscellaneous.....	621,837 91
Extra Baggage.....	36,788 77
Telegraph.....	12,486 21
Operating Expenses:	
Maintenance of Way and Structures.....	\$2,965,369 50
Maintenance of Equipment.....	2,153,309 60
Conducting Transportation.....	6,194,359 07
General Expenses.....	567,298 42
	11,910,336 59
Net Earnings.....	\$7,772,119 01
Other Income:	
Interest on Deposits and Current Accounts.....	\$154,515 03
Interest and Dividends on Stock and other Securities.....	871,035 89
Rents from Real Estate and Property.....	77,272 13
Rent of Rail.....	48,697 27
Miscellaneous.....	1,432 02
	1,152,952 34
Total Income.....	\$8,925,071 35
Deductions from Income:	
Interest on Funded Debt.....	\$4,109,110 96
Taxes.....	702,000 00
Interest on Certificates of Indebtedness.....	1,055,595 52
Rental of Leased Lines:	
C. R. R. of S. C.....	\$31,000 00
S. C. Pac. Railway.....	6,276 00
W. & B. V. R. R.....	6,000 00
	43,276 00
Dividends on Capital Stock.....	1,714,075 00
Miscellaneous.....	22,060 00
	7,646,118 08
Surplus Income for Year.....	\$1,278,953 27

### PROFIT AND LOSS ACCOUNT YEAR ENDING JUNE 30, 1903.

CREDITS.	
Balance at credit of Account on July 1, 1902.....	\$12,750,086 24
Interest on \$500,000 A. C. L. R. R. of S. C. Bonds collected in July, 1902, applicable to prior periods.....	10,000 00
Premium on Stock and Bonds.....	2,225,684 35
Refund by U. S. Government of erroneous deduction made during Spanish War on account of M. & O. Land Grant.....	4,748 10
Southern Express Co. reports collected since July 1, 1902, applicable to prior period.....	79,833 82
Exchange of Florida Southern R. R. and S. & St. P. R. R. Bonds.....	242,688 83
Accounts closed out.....	26,661 27
Net Surplus for the year ending June 30, 1903, transferred from Income Account.....	1,278,953 27
	\$16,618,635 88
DEBITS.	
Interest on Bonds charged subsequent to July 1, 1902, applicable to prior period.....	57,716 66
Surplus Profits applied to cost of L. & N. R. R. Stock.....	5,000,000 00
Accounts charged off.....	92,254 81
Charges to Real Estate transferred.....	3,707 00
	5,153,678 47
Balance at credit of Account on June 30, 1903.....	\$11,464,977 41

## FINANCIAL NEWS.

The Manufacturers' Record invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

## Review of the Baltimore Market.

Office Manufacturers' Record,  
Baltimore, Md., November 24.

The Baltimore stock market has been dull during the past week, excepting some little activity in Seaboard as a result of the recent deal under which the company obtained additional funds. United Railways, Consolidated Gas, Cotton Duck and G. B. S. Brewing issues were all neglected, and there was very little demand for investment securities.

In the trading United Railways common sold at 8 1/4 to 9, the incomes from 58 1/2 to 59 1/2, the 4 per cents at 90 1/4 to 91 1/4, and the Light & Power 4 1/2 at 81. Consolidated Gas 6s were traded in at 110 1/2; Seaboard common from 15 1/2 down to 13 1/2, the preferred at 26, and the 4 per cents from 74 1/4 down to 71 1/2; the 5 per cents sold at 90 and 90 1/4. Cotton Duck common changed hands at 2 1/2, and the 5 per cents at 67; G. B. S. Brewing incomes at 27, and the 1sts at 45 1/2 and 45 1/4. Bank stocks sold as follows: Bank of Baltimore, 111; Howard, 11 1/4; Marine, 36 1/2.

Other securities traded in were as follows: Atlantic Coast Line Railroad, 106 and 107; do. 1st 4s, 92 1/2 to 93; do. new 4s, certificates, 80; City & Suburban 5s (Washington), 92; Baltimore City 5s, 1916, W. L., 121; Raleigh & Augusta 6s, 119 and 120; Northern Central, 85; do. 6s, 1904, 102 1/2; Norfolk & Carolina 2d 5s, 115; Georgia Southern & Florida 1st preferred, 97; Columbia & Greenville 6s, 117; Pittsburg United Traction 5s, 111; International Mercantile Marine preferred, 20; Georgia & Alabama 5s, 105 1/2 and 105 1/4; Atlanta Consolidated Street Railway 5s, 105 1/2; Charleston City Railway 5s, 105; Baltimore Traction convertible 5s, 100 1/2; Pennsylvania Railroad stock, 57; City & Suburban 5s (Baltimore), 113 1/2.

## SECURITIES AT BALTIMORE.

## Last Quotations for the Week Ended November 24, 1903.

Railroad Stocks.	Par.	Bid.	Asked
Georgia Sou. & Fla. 1st Pref.	100	97	99
Georgia Sou. & Fla. 2d Pref.	100	62	70
Southern Railway (V. T.)	100	100	101 1/2
United Railways & Elec. Co.	50	8 1/4	8 1/2
Seaboard Railway Common	100	12 1/2	13 1/2
Seaboard Railway Preferred	100	24	25
Lexington Railway Co.	100	44	45
Atlantic Coast Line R. R.	100	104 1/4	107

Bank Stocks.	Par.	Bid.	Asked
Citizens' National Bank	100	29	29
Commercial & Far. Nat. Bank	100	110	110
Drovers & Mech. Nat. Bank	100	300	300
Farmers & Mer. Nat. Bank	100	66	66
First National Bank	100	154	160
German Bank	100	107 1/2	107 1/2
Manufacturers' National Bk.	100	117	117
National Bank of Baltimore	100	109	112 1/2
National Exchange Bank	100	130	135
National Howard Bank	100	10	11 1/2
National Marine Bank	100	30	36 1/2
National Mechanics' Bank	100	10	25 1/2
National Union Bank of Md.	100	117	117
Second National Bank	100	190	200
Western National Bank	100	20	41

Trust, Fidelity and Casualty Stocks.	Par.	Bid.	Asked
Baltimore Trust & Guarantee	100	225	275
Continental Trust	100	140	150
Fidelity & Deposit	50	125	140
International Trust	100	95	96
Mercantile Trust & Deposit	50	125	140
U. S. Fidelity & Guaranty	100	100	100

Miscellaneous Stocks.	Par.	Bid.	Asked
G. B. & S. Brewing Co.	100	5	12
United Elec. L. & P. Pref.	50	40	40
Consolidated Coal	100	70	70
George's Creek Coal	100	87	87
Consolidated Gas	100	60	61

Railroad Bonds.	Par.	Bid.	Asked
Atlanta & Charlotte 1st 7 1/2, 1907	100	108	108
Atlantic Coast Line 4s	100	92 1/4	92 1/2
Columbia & Greenville 1st 6s, 1916	100	116 1/2	117
Char. & W. C. 5s	100	100	100
Georgia, Car. & North 1st 5s, 1923	100	106 1/2	106 1/2
Georgia South. & Fla. 1st 5s, 1945	100	112 1/2	112 1/2
Georgia Pacific 1st 6s, 1922	100	120	120
Raleigh & Augusta 1st 6s, 1926	100	120	120
Savannah, Fla. & West 5s, 1934	100	125 1/2	128
Southern Railway Con. 5s, 1904	100	112	112
Virginia Midland 2d 6s, 1911	100	110	110
Virginia Midland 5th 6s, 1926	100	108	108
West. North Carolina Con. 6s, 1914	100	114	114

West Virginia Central 1st 6s, 1911	110	111 1/2
Wilmington & Wel. Gold 5s, 1935	116	116
Charleston City Railway 5s, 1923	104	104
Charleston Con. Electric 5s, 1909	90	90
Macon Ry. & L. 1st 5s, 1903	72 1/2	76
Newport News & Old Pt. 5s, 1938	105	105
Norfolk Street Railway 5s, 1944	105 1/2	107
United Railways 1st 4s, 1949	91 1/4	91 1/4
United Railways Inc. 4s, 1949	59 1/4	59 1/4
Seaboard 4s	71 1/4	72
Seaboard 10 year 5s	99	99 1/2
Georgia & Alabama Con. 5s	105	105

Miscellaneous Bonds.	Par.	Bid.	Asked
G. B. & S. Brewing 1st 3 1/2s	45 1/4	45 1/4	45 1/4
G. B. & S. Brewing 2d Incomes	20	30	30
United Elec. Light & Power 4 1/2s	80 1/2	83	83
Atlanta Gaslight 1st 5s, 1947	101	101	101
Consolidated Gas 6s, 1910	110	110	110
Consolidated Gas 5s, 1909	111 1/4	111 1/4	111 1/4

## Atlantic Coast Line Report.

The annual report of the Atlantic Coast Line Railroad for the fiscal year ended June 30, 1903, shows: Gross earnings \$19,682,456, an increase of \$2,813,461 as compared with the next preceding year; operating expenses \$11,910,337, increase \$1,448,425; net earnings \$7,772,119, increase \$1,365,036; total income \$8,925,071, increase \$2,288,469; net surplus after paying fixed charges and dividends, \$1,278,953; total balance to credit of profit and loss \$11,464,977. Operating expenses and taxes, amounting to \$12,612,337, were 64.08 per cent. of gross earnings from operation.

Referring to the purchase of control of the Louisville & Nashville Railroad Co., the report says that 306,000 shares were bought out of a total of 600,000 shares. Reference is also made to the acquisition of the Plant system, including the Florida Southern Railroad Co., the Sanford & St. Petersburg Railroad Co. and other lines in Florida. The extension of the Florida Southern from Punta Gorda to Fort Myers, twenty-eight miles, is to be completed and put in operation early next year. There are no other lines under construction by the company.

During the year the sum of \$2,995,370 was expended for maintenance of way and structures, an increase of nearly 10 per cent. over the preceding year. More than 6000 tons of new steel rail were laid, and 1,516,900 cross-ties were used. The total trackage of the company is 4138.87 miles. For the maintenance of equipment \$2,153,309 were spent, a slight decrease as compared with the preceding year. At the end of the year the company owned 451 locomotives, an increase of seven, sixteen new engines having been purchased and nine retired. The company also had 13,972 freight cars and 502 passenger cars, with 399 cars in the road-service equipment. As compared with last year the company has 923 more freight cars, there having been 1214 cars built and 291 put out of service.

It is also to be noted that the cost of conducting transportation, which amounted to \$6,194,359.07, shows an increase of \$577,313, or 10.28 per cent., as compared with the preceding year, the principal causes of the advance being the higher price of fuel, higher wages for employees and a large increase in tonnage handled. There were 7,674,271 tons of freight carried, with average receipts of \$1.83 per ton, and 3,728,033 passengers carried, with average receipts of \$1.03 per passenger. The freight receipts per mile were \$3393.78, and the passenger receipts per mile \$926.55, the receipts from passenger-train service being \$1208.48. The gross earnings per mile were \$4755.51; operating expenses, \$2877.69, and net receipts, \$1877.84.

There were 1,068,277,144 tons carried one mile, at an average rate per ton per mile of .013, and there were also 157,075,477 passengers carried one mile, at an average rate per passenger per mile of .024. The freight receipts per train-mile were \$2.10, and the passenger receipts per train-mile were \$0.66, but the receipts from passenger-train service per train-mile were \$0.87.

The general balance sheet shows that the property, construction and equipment of the company is valued at \$127,255,911, and that the Louisville & Nashville stock owned by the company is valued at \$45,554,220. The capital stock of the Atlantic Coast Line consists of \$35,659,000 of common stock and \$1,744,100 of preferred stock, besides \$991,000 of common class A of the Richmond & Petersburg Railroad. The total bonded debt of the company is \$72,569,275, or \$18,146 per mile, while the fixed charges are \$3,059,227 per annum, or \$765 per mile. There is no floating debt, and the only equipment trust obligation outstanding amounts to \$136,666, which the company became liable for as the result of consolidation with other companies, and which is being paid off at the rate of \$40,000 a year.

At the annual meeting of the Atlantic Coast Line, held at Richmond, the officers were re-elected. The stockholders' meeting authorized the board of directors to establish a board of pensions, under which pensions will be paid to retired officers and employees on the basis of service and age.

## Louisiana &amp; Arkansas.

The annual report of the Louisiana & Arkansas Railway Co. for the fiscal year ended June 30, 1903, shows gross earnings \$532,534, increase as compared with the fiscal year ended June 30, 1902, \$54,002; operating expenses and taxes \$371,706, increase \$76,131; net earnings \$160,827, decrease \$22,129; total net income \$178,670, decrease \$4286; surplus after paying interest \$108,643, decrease \$41,312. It is to be noted that of the increase in gross earnings 60 per cent. was absorbed by increased cost of conducting transportation, due to several causes, including the maintenance of adequate train service on new mileage, higher wages and the operation of the per diem system of settlement for use of borrowed freight cars. There were 127 miles of line operated, an increase of thirty miles over the next preceding fiscal year.

At the close of the year the company had nearly 148 miles of line in operation, the line from Stamps to Hope, Ark., about twenty-two and one-half miles, having been finished and put in operation on June 1. An extension southeast from the southern terminus of the line at Winnfield, La., to Jena, La., nearly thirty-nine miles, was begun, and the map accompanying the report shows that it is proposed to continue this extension to Vidalia, on the Mississippi river, and also to build a branch from Packton, a short distance east of Winnfield, south to Alexandria, La. The extension from Winnfield to Jena via Georgetown is under contract to be completed by January 1. The grading is 90 per cent. completed and rails are being rapidly laid. The extension traverses a region heavily timbered with a virgin growth of long-leaf pine, most of which is owned by the persons who own the railroad. The completed extension from Stamps to Hope opens a valuable farming country and establishes connection with the Iron Mountain division of the Missouri Pacific Railway and with the Ashdown and Hope extension, the Rock Island-Frisco system. The report shows that the prospects of the company are excellent.

Concerning this company the Commercial and Financial Chronicle says: "The business activity of the last few years has induced capitalists and banking interests to undertake the construction and extension of various small roads throughout the country. Some of these, according to present appearances, seem likely to prove decidedly profitable to the projectors of the enterprises, while being a boon to the

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communities which the new roads are intended to serve. This thought is suggested by the appearance the present week of the annual report of the Louisiana & Arkansas Railway Co. The total gross earnings of this little road in the late fiscal year were but slightly in excess of half a million dollars, but the enterprise attracts attention by reason of the further extensions under way, and which, when completed, will make the road a link in a line connecting New Orleans and the lower Mississippi valley with Oklahoma, the Indian Territory, Kansas and the country generally west of the Missouri river."

## A Bank Deal Closed.

The First National Bank of Baltimore has closed a deal for the purchase of the Manufacturers' National Bank of Baltimore, the latter having a capital stock of \$500,000, and surplus and net undivided profits, \$105,818. The capital of the First National is \$1,000,000, and the surplus and undivided profits \$402,703. The price to be paid for the stock of the Manufacturers' Bank is \$122 a share, the par being \$100.

It is reported that the Bank of Thomasville, N. C., will soon become a national bank, to be known as the First National Bank of Thomasville; capital \$25,000.

[For Additional Financial News, See Page 30.]



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**CONDENSED STATEMENT OF THE First National Bank of Richmond, Va.**

SEPT. 9, 1903.

**RESOURCES.**

Loans and Discounts	\$4,977,590 94
Overdrafts	143 64
Other Stocks and Bonds	17,401 78
Banking House and other Real Estate	67,510 14
Furniture and Fixtures	0 00
U. S. 2 Per Cent. Bonds at par (Market Value \$667,025 00.)	612,500 00
Premium on U. S. Bonds	0 00
Virginia Bonds to Secure U. S. Deposits	386,000 00
Cash and Due from Banks	1,408,812 35
	\$6,580,457 75

**LIABILITIES.**

Capital	\$500,000 00
Surplus and Profits, net	515,742 23
Reserved for Interest	9,096 01
Circulation	599,000 00
Deposits	4,447,219 51
U. S. Bond Account	12,500 00
Virginia Bond Account	386,000 00
	\$6,580,457 75

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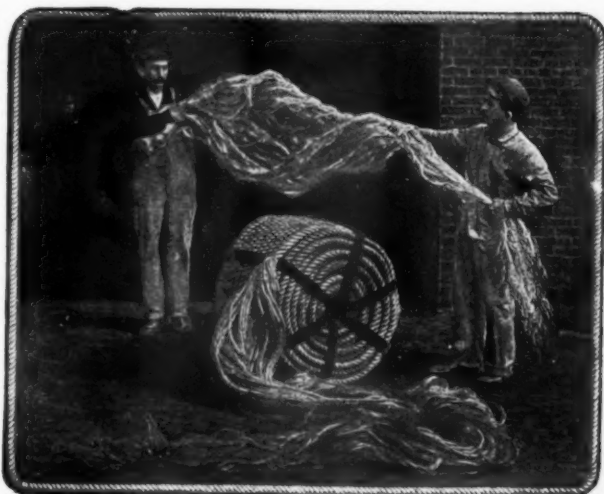
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## New Corporations.

The Bank of Gibson has been chartered at Gibson Station in Gibson county, Tennessee; capital \$20,000.

The Bank of Tuttle has been incorporated at Tuttle, I. T., with \$5000 capital, by E. Dowden, E. H. Perry and E. E. Newhouse.

The Bank of Newborn at Newborn, Ga., has been chartered, with \$25,000 capital. The incorporators are C. A. Banks, N. R. Smith, J. M. Lloyd and others.

A new bank is reported in process of organization at Wellsville, Mo.; capital \$15,000. Those interested are J. L. Mitchell, C. H. Early and W. W. Barrett of Centralia.

It is reported that a national bank, with \$25,000 capital, has been organized at Lake Arthur, La., by Frank Roberts, cashier of the Lake Charles National Bank, and others.

The Bank of Norcross of Norcross, Ga., capital \$25,000, has applied for a charter. The organizers are O. O. Simpson, A. A. Johnson, S. F. McElroy and C. A. McDaniel, all of Gwinnett county.

The Bank of Lithonia at Lithonia, Ga., has applied for a charter; capital \$25,000. The incorporators are J. C., G. W., W. M. and G. S. Johnson, A. B. Coffey, J. K. Marbut, W. K. Watson and R. W. Milner.

The New Cumberland Building and Loan Association of New Cumberland, W. Va., capital \$50,000, has been organized by George B. Walker, A. W. Brown, O. S. Marshall, N. W. Ballantyne, Geo. W. Donohoe, New Cumberland, W. Va.

The Bank of Elkton, Elkton, Rockingham county, Virginia, has been chartered, with capital of from \$10,000 to \$50,000. The directors are J. E. Leebrick, president; C. G. Harnsberger, vice-president; J. T. Heard, William E. Kite, M. M. Jarman, G. G. Grattan and W. J. Dingleline.

The Dixon Springs Bank has been organized at Dixon Springs, Tenn.; capital \$12,000. The officers are S. C. Bridgewater, president; J. D. Allen, vice-president; Gayle Ford of Frankfort, Ky., cashier; directors, J. F. Rutland, William Jones, Johnson Beasley, Z. T. Gregory, J. B. Winkler.

The Hickman County Bank has been organized at Centerville, Tenn., with capital of \$60,000 and the following directors: A. H. Grigsby, president; D. W. Shofner, vice-president; D. M. Cooper, cashier; Sam Caruthers, W. I. Pace, R. E. Arnall, W. D. Caruthers, Sam Woollard, Hollis Harner, C. A. Harner and I. F. McClain.

A bank has been organized at Auburn, Tenn., with \$10,000 capital. The officers are A. E. Patter, president; D. R. McKnight, vice-president; W. R. Robinson, cashier; finance committee, E. J. Robinson, D. R. McKnight and Sam Odom; directors, A. E. Potter, D. D. Overall, B. W. Robinson, H. L. Overall, W. R. Robinson, J. B. Adams and E. B. James.

The Interstate Mutual Fire Insurance Co. has been chartered at Augusta, Ga., by W. A. Latimer, George R. Lombard, Thomas Barrett, E. E. Verdery, T. C. Danforth, J. P. Verdery, F. B. Pope, H. H. Cummings, J. H. Davison, Boykin Wright, D. B. Dyer, J. W. Dickey, T. W. Alexander, Bryan Cumming, P. A. Rhodes, W. C. M. Buckley, J. D. Davison and J. W. Chaffee.

The Suwanee Insurance Co. has been incorporated at Lake City, Fla., with \$150,000 paid-up capital and \$100,000 surplus, the directors being as follows: President, R. F. Rogers; secretary, T. J. Appleyard; treasurer, Arthur Winzell; H. J. Drany, Lakeland; Otis R. Parker, mayor of Lake City; Guy Gillen, Lake City; A. H. D'Alemberts, Pensacola; W. E. Evans, Monticello; Arthur Cox, Lake City.

## New Securities.

The Citizens' Bank of Lawton, Okla., has increased its capital from \$10,000 to \$20,000.

San Antonio, Texas.—San Antonio has registered \$50,000 of 4 per cent. 40-year school bonds.

Guthrie, Okla.—District No. 18 in Greer county has registered \$9500 of 5 per cent. school bonds.

Richmond, Va.—The congregation of Beth Ahaba proposes to issue \$40,000 of bonds in denominations of \$100 each.

Hawkinsville, Ga.—Bids will be received by the bond commission until noon on December 26 for \$40,000 of 29-year bonds. T. J. Holder is city clerk and treasurer.

St. Louis, Mo.—The Buckingham Investment Co., of which Joseph A. Duffy is president, and Frederick A. Smith, secretary, proposes to meet on December 8 for the purpose of issuing \$350,000 of first mortgage bonds and \$100,000 of second mortgage bonds, the rate of interest to be then fixed.

## Financial Notes.

The Penny Savings Bank of Pine Bluff, Ark., has changed its name to the Jefferson County Savings Bank.

The Paintsville National Bank of Paintsville, Ky., has increased its capital from \$25,000 to \$50,000 and its surplus from \$10,000 to \$20,000.

The report of the Baltimore, Chesapeake & Atlantic Railway (Pennsylvania system) shows an increase of \$80,000 in the gross earnings for the fiscal year.

The Merchants and Farmers' National Bank of Charlotte, N. C., reports at the close of business November 17, deposits, \$795,623; loans and discounts, \$767,722; capital, \$200,000; surplus and profits, less expenses, \$91,326. C. N. Evans is cashier.

The Birmingham Trust & Savings Co. of Birmingham, Ala., reports at the close of business November 17, deposits, \$2,849,851; loans and discounts, \$2,137,902; capital, \$500,000; surplus and undivided profits, \$194,800. Arthur W. Smith is president; W. H. Manly, cashier.

The Kansas City, Mexico & Orient Railway Co. is reported to have filed in Oklahoma a \$20,000,000 mortgage to the United States & Mexican Trust Co. of Kansas City to secure bonds, this being part of the financial plan for completing the line.

The First National Bank of Baltimore reports at the close of business November 17, total deposits, \$4,719,869; loans and discounts, \$3,211,636; capital, \$1,000,000; surplus and undivided profits, less expenses and taxes, \$424,269. J. D. Ferguson is president, and H. B. Wilcox, cashier.

The First National Bank of Birmingham, Ala., reports at the close of business on November 17, loans and discounts, \$3,556,974; deposits, \$5,022,081; capital, \$300,000; surplus and profits, \$378,265; cash, \$1,969,754. Mr. W. P. G. Harding is president, and W. W. Crawford, cashier.

The Queen & Crescent Route and connecting lines will operate the Chicago and Florida Special and Florida Limited this year, same as last, commencing January 11, 1904, running through service from Chicago via Big Four and Monon, Cleveland via Big Four, Detroit and Toledo via Michigan Central and Cincinnati, Hamilton & Dayton Railway, and Louisville via Southern Railway. Solid train from Cincinnati to St. Augustine.

Equipment will consist of Pullman drawing-room and standard sleepers, composite, dining and observation cars and day coaches on the Florida Limited.

Chicago and Florida Special will be a solid Pullman train from Cincinnati to St. Augustine. The train will be limited, and General Manager Garrett assures us that the trains will be run on schedule. †

FISK & ROBINSON  
BANKERS

Government Bonds

and other

Investment Securities

MEMBERS NEW YORK STOCK EXCHANGE

35 CEDAR STREET 28 STATE STREET  
NEW YORK BOSTON

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Hamilton Woolen Co. Stock,  
American Press Assoc'n,  
Union Typewriter, 1st Pref'd,  
American Bank Note,  
U. S. Envelope, Pref'd,  
Trenton Potteries, Pref'd,  
Syracuse R. Transit, Common,  
Ohio & Indiana Gas Stock,  
Colts Arms Co. Stock,  
Standard Coupler Co., Common,

DEALT IN.

## TOBEY &amp; KIRK,

25 Broad St., New York.

Established 1873.

J. Wm. Middendorf, Pres. A. H. Rutherford, Treas.  
R. L. Williams, Vice-Pres.  
Howard P. Page, Sec. and Auditor.  
E. L. Benline, General Manager,  
Office of Gen. Mgr., Richmond, Va.

## Railways &amp; Light Co. of America,

EXECUTIVE OFFICES:  
CONTINENTAL TRUST BUILDING,  
BALTIMORE, MD.

Finances, Builds, Purchases Electric Railways,  
Electric Lighting Properties, Waterworks, Ice  
Plants, Etc. Examinations made and reports  
turned on all classes of industrial properties.  
CORRESPONDENCE SOLICITED.

HENRY W. THOMSON,  
Spartanburg, S. C.

## STOCK AND BOND BROKER,

Southern Cotton-Mill Stocks a Specialty.  
CORRESPONDENCE SOLICITED.

## WE FINANCE AND BUILD

Electric Railways, Power Stations, Water Powers, etc., etc.

## WE BUY

Railway Charters and Franchises, ALSO Small Issues of  
Railway, Mining and Industrial Bonds.

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## The Mechanics Electric Co.

P. O. Box 1157.

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APPRAISALS.

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Investigations for Financing and Underwriting  
and for Reorganization Committees.

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Write for fourth edition of  
"Pointers on Delaware Cor-  
poration." Official forms,  
estimates of cost and copies  
of the amended law.

## DELAWARE TRUST COMPANY

WILMINGTON, DELAWARE.

The Exchange Bank,  
MACON, GA.

J. W. CABANISS, Pres. C. M. ORR, Cash.  
W. H. BURDICK, Asst. Cash.

Capital, \$500,000.00

Surplus and Undivided Profits, 131,028.69

Best facilities for making Collections at lowest rates. Correspondence invited.

Jacob Phinizy, Pres. Chas. G. Goodrich, Cash.  
Hamilton H. Hickman, Vice-Prest.

## Georgia Railroad Bank,

AUGUSTA, GA.

Capital, \$200,000.00 Undivided Profits, \$201,585.63

Commenced Business December 31, 1892.

## SURETY BONDS.

## Fidelity and Deposit Co.

OF MARYLAND.

Home Office, - BALTIMORE, MD.

Assets Over \$5,000,000.

Pioneer Surety Co. of the South.  
Becomes Surety on Bonds of every de-  
scription.

AGENTS IN ALL PRINCIPAL CITIES.

HARRY NICODEMUS, EDWIN WARFIELD,  
Sec'y and Treas. President.

## Guaranteed Storage Receipts Issued

For property stored on your own premises or in  
Public Warehouses. Also for Property stored  
in the warehouses of this Company.

All Receipts GUARANTEED by the FIDELITY &amp; DEPOSIT CO. of Md

A HIGH CLASS COLLATERAL—Accepted in all money markets.

## Baltimore Fidelity Warehouse Co.

BALTIMORE, MARYLAND.

ALBERT G. OBER, President.

T. E. WITTERS, Sec'y &amp; Mgr.

THOS. L. BERRY, Treasurer

AGENCIES:

Equitable Trust Company, Augusta, Ga.

American Trust &amp; Banking Co., Atlanta, Ga.

Other agencies will be established where needed.

Correspondence Solicited.

## PALMETTO BANK &amp; TRUST CO.

COLUMBIA, S. C.

CAPITAL \$250,000.

GENERAL BANKING BUSINESS TRANSACTED

In the heart of the great cotton mill develop-  
ment of the South, our services are offered to  
investigate securities and enterprises.  
High class securities offered for sale.



### Pennsylvania Railroad's Subway Trains to and from Points South and East.

The Pennsylvania Railroad Co. announces that for the better accommodation of through passengers between Philadelphia and the South, on and after November 29, 1903, all passengers for Philadelphia, or through passengers between New York and the South desiring to stop off at Philadelphia, using trains that run through the subway at West Philadelphia, will leave the train at West Philadelphia Station. Passengers leaving Philadelphia by subway trains for the South or East will also take such trains at West Philadelphia Station or North Philadelphia Station (Germantown Junction), as may be most convenient.

The baggage of passengers by subway trains will also be forwarded from and delivered at West Philadelphia Station, instead of Broad Street Station.

The cab service maintained by the company at West Philadelphia Station and the street-car system render the station accessible to all sections of the city.

[Commercial Tribune, November 5, 1903.]

#### New Train on C., H. & D.

The Cincinnati, Hamilton & Dayton Railroad today starts to operate on its Chicago service one of the handsomest trains in the West. Something new in the passenger accommodation line is a full-sized smoking car, seventy-one feet long, which can hold eighty-eight people. This is furnished in quartered oak and silk-faced pantosote curtains. The ladies' coach is an innovation also.

It contains, besides seats for forty-eight people, a cafe, including kitchen and dining-room. The entire furnishing is in mahogany, with handsome curtains. The parlor car, seventy feet long, is also furnished entirely in mahogany, and contains twenty-eight chairs, in addition to eight wicker leather-upholstered chairs, a lounge and a full Pullman section. The train will have the usual baggage, mail and express cars. It will leave Cincinnati at 12.20 noon, and will be open for inspection by the public at noon.

#### Christmas Holiday Excursion Rates.

Southern Railway will sell to teachers and students of schools and colleges, December 16 to 22, inclusive, final limit returning January 8, 1904, tickets at very low rates upon presentation and surrender of certificates signed by superintendents, principals and presidents of various institutions.

For the general public these low-rate tickets will be on sale December 23, 24, 25, 30 and 31, 1903, and January 1, 1904, with final limit January 4.

For tickets and further information apply 120 E. Baltimore street.

## VICKSBURG AMERICAN

The Leading Afternoon Paper of Mississippi.  
Edited by F. M. RUNNELS.

Full associated press reports. The best advertising medium in eastern Mississippi.  
The paper for the people. For information apply to business office, VICKSBURG, MISS.

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The leading daily of the Delta. Sound in politics, progressive in policy, an unexcelled advertising medium. BUY IT AND ADVERTISE IN IT.

For rates, apply to

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Editor and Proprietor, Greenville, Miss.

### POWER HAMMERS FOR SALE.

1 "Dupont" 50-lb. Head power hammer.  
1 "Dupont" 150-lb. Head power hammer.  
Both in perfect order.

Grafton Sanderson, St. Johnsbury, Vt.

## Hibernia Bank & Trust Co.

New Orleans, La.

Capital \$1,000,000 Surplus \$2,000,000  
Deposits \$12,000,000

Transacts a general Trust and Banking business, offering every facility to Banks, Bankers and Corporations that their balances and responsibility warrant.

Foreign Exchange bought and sold.  
Collections made on all points in the South.  
Acts as Trustee under corporate mortgages for railroads and other corporations and as Registrar and Transfer Agent for stock.  
High grade investment bonds bought and sold.

#### OFFICERS:

J. W. CASTLES, President.  
G. R. WESTFELD, Vice President.  
JNO. J. GANNON, Vice President.  
CHARLES PALFREY, Cashier.  
GEORGE FERRIER, Assistant Cashier.  
P. L. GIRAULT, Assistant Cashier.  
L. M. POOL, Assistant Cashier.  
WYATT H. INGRAM, JR., Trust Officer.

### Statement of the Condition of the Birmingham Trust & Savings Co. BIRMINGHAM, ALABAMA.

At Close of Business, November 17th, 1903.

#### ASSETS.

Loans and Discounts..... \$2,137,902.56  
Overdrafts..... 1,014.71  
U. S. and other Bonds..... 78,324.70  
Real Estate, Furniture and Fixtures Due from Banks and Bkrs. \$872,132.42  
Cash in Vault..... 355,618.12

#### LIABILITIES.

Capital Stock..... \$ 500,000.00  
Surplus..... 150,000.00  
Undivided Profits..... 44,890.61  
Dividends Unclaimed..... 250.00  
Certified Checks..... 2,716.12  
Due to Banks & Bkrs. 397,274.45  
Individual Deposits... 2,539,861.33

ARTHUR W. SMITH, President.  
TOM O. SMITH, Vice-President.  
W. H. MANLY, Cashier.  
BENSON CAIN, Asst. Cashier.  
CHAPPELL CORY, Secretary.

#### The Trust Department.

The Trust Department of the BIRMINGHAM TRUST & SAVINGS CO. is a legal depository for Court and Trust Funds.  
Acts as trustee under corporate mortgages of every kind. Registers and transfers corporate stocks and bonds.

Acts as agent for the payment of coupons, called bonds and dividends for corporations.  
Acts as Executor, Guardian, Administrator, Committee, Assignee, Receiver, Registrar, Transfer and Fiscal Agent.  
Wills and other valuable papers will be held free of charge when the Company is made Executor.

#### Interest Paid on Savings Deposits.

### Alabama Consolidated Coal & Iron Co.

BALTIMORE, November 23d, 1903.

The Sixteenth Dividend of one and three-quarters per cent. on the Preferred Stock of the Company has been declared by the Directors, payable December 1st to stockholders of record November 24th. The transfer books will be closed from November 24th until December 2d, 1903.

CHAS. T. WESTCOTT, Treasurer.

#### Established 1835.

### The Merchants National Bank, BALTIMORE, MD.

DOUGLAS H. THOMAS, President.  
WM. INGLE, Cash. J. C. WANDS, Asst. Cash.

Capital, \$1,500,000.  
Surplus and Profits, \$893,000.  
Deposits, \$10,150,000.

Accounts of Banks, Bankers, Corporations and Individuals solicited. We invite correspondence.

### CONDENSED REPORT TO COMPTROLLER The First National Bank of Birmingham, Ala. November 17th, 1903.

Resources.	Liabilities.
Loans and Discounts.....\$3,556,974.79	Capital Stock.....\$ 300,000.00
Overdrafts..... 195.92	Surplus and Profits..... 378,265.37
U. S. Bonds and Premiums 367,000.00	Reserved for Taxes..... 3,878.45
Other Stocks and Bonds... 59,300.00	Circulation..... 300,000.00
Bank Building..... 51,000.00	
<b>Cash.</b>	<b>Deposits.</b>
In Vault.....\$ 492,008.42	Individual.....\$4,296,903.04
With Banks... 1,459,691.80	Bank..... 675,178.47
With U. S. Treasurer... 18,054.40	United States... 50,000.00
\$1,969,754.62	\$5,022,081.51
\$6,004,225.33	\$6,004,225.33

#### OFFICERS.

W. P. G. HARDING, President.  
J. H. WOODWARD, Vice-President.  
W. W. CRAWFORD, Cashier.  
J. H. BARR, Vice-President.  
A. R. FORSYTH, Asst. Cashier.

#### DIRECTORS.

T. T. HILLMAN, President Pratt Coal Co.  
B. F. MOORE, Sec'y and Treas. Moore & Handley Hardware Co.  
E. M. TUTWILER, President Tutwiler Coal, Coke & Iron Co.  
W. S. BROWN, Merchant.  
J. H. WOODWARD, President Woodward Iron Co.  
WM. A. WALKER, Attorney-at-Law.  
F. D. NABERS, Wholesale Drugs.  
T. H. MOLTON, Real Estate and Insurance.  
ROBERT JEMISON, President Birmingham Railway, Light and Power Co.  
ERSKINE RAMSAY, of Ramsay & McCormack, Bankers.  
W. H. HASSINGER, Vice-President Republic Iron and Steel Co.  
WALKER PERCY, Attorney-at-Law.  
F. M. JACKSON, President Blocton-Cahaba Coal Co.  
J. H. BARR, Vice-President.  
W. P. G. HARDING, President.

### WE INVITE YOUR DEPOSIT ACCOUNT.

## United States Mortgage & Trust Company

GEORGE W. YOUNG,  
President.

55 Cedar Street. New York. 73d St. and Broadway.

### CAPITAL AND SURPLUS FIVE MILLIONS.

Issues Travellers' Letters of Credit and Foreign Drafts.

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Strong, conservative and progressive. Its success has built it a handsome new home into which it is about to move. If you want the news, read it. If you want the business, advertise in it.

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Business Manager, Greenville, Miss.

Companies Organized Under Corporation Laws of Delaware.

The Laws furnish, at least expense, ample rights to stockholders, with minimum restriction upon corporate action. Charters perpetual, not subject to repeal by the Legislature. Copy of the Law, Blank Forms and Estimate of Expenses furnished by

DELAWARE CORPORATION CO.  
926 Market Street, WILMINGTON, DEL.

#### BONDS.

\$7,000 GEORGIA STATE BONDS, Registered; 4½%, \$1000 each, due January, 1909. Yield 3.30%. All or any part for sale by

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STOCKS, BONDS AND REAL ESTATE, AUGUSTA, GA.

#### HIGH GRADE

7 per cent. Preferred Stocks, in modern, up-to-date Southern Cotton Mills. Other investment securities also.

F. C. Abbott & Company,  
Charlotte, N. C.

## W. P. BROWN & CO. Cotton Merchants and Exporters.

839 Gravier St. New Orleans.

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## ALPHABETICAL INDEX OF ADVERTISERS.

Ads. marked \* appear every other week. Ads. marked † appear in first issue of the month. Ads. marked ‡ not in this issue.

For CLASSIFIED INDEX See  
Pages 3, 5, 7, 9, 11, 13, 15  
and 17.

[illegible]



## PROPOSALS.

**TREASURY DEPARTMENT**, Office of the Supervising Architect, Washington, D. C., November 19th, 1903.—Sealed proposals will be received at this office until 3 o'clock P. M. on the 29th day of December, 1903, and then opened, for the construction (including plumbing, heating apparatus, electric wiring and conduits) of the extension of the U. S. Post Office at Rome, Ga., in accordance with drawings and specification, copies of which may be had at this office or at the office of the Custodian at Rome, Ga., at the discretion of the Supervising Architect. **JAMES KNOX TAYLOR**, Supervising Architect.

## TENDERS.

Sealed Tenders, marked "Quarry Tenders," will be received by the undersigned on or before noon of the 15th day of December, 1903, at the office of the Dominion Iron & Steel Co., Limited, Sydney, Nova Scotia, Canada, for the quarrying, crushing and delivering of f. o. b. vessel of from 300,000 to 400,000 tons of limestone per year, to be taken from the quarries of said Company at Marble Mountain, Inverness County, Cape Breton, as per specifications. Copies of the specifications can be seen at the Company's office, together with blueprints and photographs showing quarry and plant. Work to begin January 1, 1904. Contract to be for three years. The party whose tender is accepted will be required to give a bond to the Company with a sufficient surety or sureties of due performance of his contract. The lowest or any tender not necessarily accepted.

(Signed) **DAVID BAKER**, General Manager  
Dominion Iron & Steel Co., Limited.

## NOTICE.

THE CITY COUNCIL OF AUGUSTA will receive sealed bids up to noon December 1st, 1903, for \$100,000 of thirty-year 4 per cent. bonds of the denomination of \$1000, interest payable semi-annually, to take the place of an issue of \$100,000 of bonds maturing January 1st, 1904, bearing 6 per cent. interest. The new bonds are dated January 1st, 1904, and will be delivered to the highest bidder on that date, and are refunding bonds to the extent of \$100,000. A certified check for \$1000 must accompany each bid; check to be on a National Bank, payable to the Chairman of the Finance Committee of the City Council of Augusta. The City reserves the right to reject any or all bids.

**JACOB PHINIZY**, Mayor, C. A.  
**WM. A. LATIMER**,  
Chairman Finance Committee.

## BOND SALE.

The City of Hawkinsville, Ga., offers for sale \$40,000 twenty-nine year bonds. Denomination \$1000. Coupon May and November, payable at office of City Clerk and Treasurer, Hawkinsville, Ga., in currency or New York exchange. Bonds dated November 1st, 1903. Free from city tax. Bids to be opened at 12 o'clock M., December 26th, 1903, by the Bond Commission. Sealed bids can be made for all or any part of said bonds, and must be accompanied by a certified check for five per cent. of the par value of the amount bid for. Successful bidders to pay for bonds allotted them January 14, 1904. Any further information cheerfully given.

Address bids to  
**T. J. HOLDER**,  
City Clerk and Treasurer,  
P. O. Box 14, Hawkinsville, Ga.

## BOND SALE.

The City of Atlanta, Ga., offers for sale \$399,000 10-year Redemption Gold Bonds, denomination \$1000, coupons, July and January, payable in New York and Atlanta; interest, 4 per cent. Bonds to be dated January 1, 1904, free from city tax. Bids to be opened December 1, at 12 M., by the finance committee. Bids can be made for all or any part of said bonds, and must be accompanied by a certified check for five per cent. of the par value of the amount bid for. Successful bidders to pay for bonds allotted them December 30, 1903. Any further information cheerfully given. Address bids to

**J. H. GOLDSMITH**,  
City Comptroller, Atlanta, Ga.

**PROPOSALS** will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 12 o'clock noon, December 15, 1903, and publicly opened immediately thereafter, to furnish at the navy-yards, Mare Island, Cal., and Puget Sound, Wash., a quantity of arc lamps, fan blowers, transformers, electric motors, wire, conduit and fittings, miscellaneous electrical supplies, nuts, rivets, washers, wire gauze, padlocks, nails, drills, files, screws, miscellaneous hardware, various machine tools, Douglas fir, Puget Sound ship spars, bar iron and steel, plain and galvanized sheet steel, sheet lead, roofing tin, boiled and raw linseed oil, kerosene oil, concentrated lye, white and red lead, putty, polishing paste, graphite, gold leaf, brass and steel tubes, pipe fittings, iron pipe, water-closets, steam gauges, evaporated peaches and apples, tinned roast and corned beef, tinned bacon, lard, canned

salmon, pickles, tinned tomatoes, tinned corn, rice, tea, sugar, salt, evaporated cream, deck scrub brushes, oakum, curled hair, mattresses, ticking, cocoa and rubber mats, aquilees, bath brick, leather belting, magnesia pipe covering, cotton-jacketed fire hose, sandpaper, chalk, gasoline, rope extension ladders, hose carts, duplex pump and construction of three sewers. Blank proposals will be furnished upon application to the Navy Pay Offices, San Francisco, Cal., and Seattle, Wash. **H. T. B. HARRIS**, Paymaster-General, U. S. N.

**\$20,000** Water Works and Electric Light Bonds. Town of Belzoni, Washington County, Mississippi.

Sealed bids will be received by the Board of Mayor and Aldermen of the Town of Belzoni, Washington County, Mississippi, for the sale of **TWENTY THOUSAND DOLLARS (\$20,000) Six Per Cent. Twenty-Year "Serial" Water Works and Electric Light Bonds** up to 7 o'clock P. M., December 1st, 1903. The Board reserves the right to reject any or all bids. A certified check must accompany all bids for the sum of \$500. For any further information, address

**S. CASTLEMAN**, Mayor.

PITTSBURG  
METER CO.

MAKERS OF

WATER METERS  
AND  
GAS METERS

OFFICE AND WORKS:

East Pittsburg, Pa.

**BREMEN MERCHANT**, in close connection with the managers of the principal industrial concerns, as well as with farmers and sugar manufacturers in the interior, is desirous of representing first-class American firms for the sale of industrial and agricultural machinery in Germany. Highest references on application.  
Address **H. B., P. O. Box 903,**  
**NEW YORK CITY.**

You Should Only Buy  
One Piano in a Lifetime,

and it would interest yourself  
enough to see the

## Stieff Piano

you would find in it an instrument that would more than realize your ideals.

Only One Grade and an Honest Price.

PAY { Cash or  
Monthly

and in short time you will own a **High Grade Piano**, fully guaranteed.  
Other Pianos, used and new.

Uprights.....\$100, \$150 up.  
Squares.....\$25 up.

**STIEFF, 9 N. Liberty St.**

BALTIMORE, MD.

If you are thinking of enlarging your mill, factory or mine, or of purchasing machinery of any kind, send the Manufacturers' Record a postal card giving the character of the machinery needed.

## ESPECIAL QUALITY IN

## STEEL CASTINGS.

"SEABOARD" STEEL CASTINGS show physical qualities equal to the finest forgings. Our raw material is most carefully selected and our PRODUCT fills the highest requirements.

OPEN HEARTH STEEL CASTINGS, for locomotives, shipbuilding, electrical, pump and general machinery purposes. Subject to U. S. Government, Lloyd's, Railroad and other specifications.

**Seaboard Steel Casting Company, Chester, Pa.**

Close mill connections enable us to furnish direct  
from mills when desired:

ANGLES,  
BARS,  
BANDS,  
BEAMS, CHANNELS,  
ZEES, TEES,  
HOOPS,  
PLATES,  
Etc.

RAILS,  
RIVETS,  
SHAFTING,  
SHEETS,  
STRIP STEEL,  
STEEL TIRE,  
TUBES,  
Etc.

THE  
**BOURNE-FULLER CO.**

IRON, STEEL,  
PIG IRON,  
COKE.

Cleveland, Ohio.

Daily Capacity  
150 Cars.

**JOHN H. KIRBY**, President.

Capital  
\$10,000,000.00

## Kirby Lumber Co.

General Office, Houston, Tex.

MANUFACTURERS OF

Saw Products of Long  
Leaf Yellow Pine Trees.

We can S4S up to 20x30.

We can Saw up to 70 ft.

Sixteen mills in operation, two more building. These mills are located on two of the greatest railway systems in the South, reducing difficulty arising from lack of cars to a minimum.

We are the Largest Producers of Yellow Pine Lumber  
in the World.

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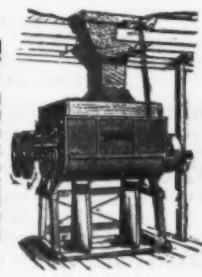
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20,000 acres virgin long-leaf yellow pine, close grain, long bodies, trees from 12 to 36" diameter; carefully cruised by one of my woodsmen and guaranteed to cut an average of 6500 ft. per acre, running from 5000 to 8000 ft.

Lays on both sides of a floating stream, fine mill site with good boom facilities, 4 miles from railroad. Road will extend to mill site upon establishment of a 50,000-ft. plant. Country is hilly, but rolling, and not broken; timber can be cut, logged and floated to mill site for \$4 per M. average—much of it for \$2 to \$3 per M. I will sell this timber, guaranteeing delivery of 130,000,000 ft., for \$11 per acre, fee-simple, or join practical mill men with equal capital in the organization of a company to manufacture same. Correspondence invited from such, and none others.

3000 acres Louisiana red cypress, 2 to 4 miles from Mississippi river and railroad; cruised and guaranteed to cut 10,000 ft. average per acre. \$3.50 per M.

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Will contract to buy back the land at \$10 per acre as fast as cleared, in any size tracts.

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300,000 acres Pine in Mississippi, Louisiana, Florida and Canada. Several splendid Coal and Hardwood tracts. Buyers can deal direct.

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Parsons, Tucker Co., W. Va.

## Buyers and Sellers

of Coal, Mineral and Timber propositions will consult their interest by addressing

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If you have a dividend-paying property to sell or wish to buy, write me. The larger the deal the better.

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R. E. WATSON, Austell Bldg., ATLANTA, GA.

FOR SALE CHEAP—Good Circular Saw Mill. Mill 50,000 ft. daily capacity. Clark Bros. make. Saw mill complete. Steam feed, gang edger, live rolls, good planer, saws, tools and belts. Everything in first-class condition. Will be sold very cheap.

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The W. T. Weaver Power Company,  
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This Development Yields  
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Good Factory Sites, Cheap Power, Abundant Labor of the best quality, Good Railroad Facilities, Ideal Climatic Conditions, Pure Water for Bleacheries and Finishing Plants from a mountain creek running through the premises, having a discharge of 5,000,000 gallons in 24 hours, are some of the merits of this locality that will command the consideration of manufacturers.

For particulars, address

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ASHEVILLE, N. C.

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WATER POWER 24 Hours  
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46 Feet Head and Fall at

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JAS. W. WILSON, President,

Write for Booklet. WELDON, N. C.

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1st. Island Ford Water Power on Deep River, with 147 acres of land, three miles from D. & C. R. R.

2d. Carbondon Water Power on Deep River, with four acres of land, on D. & C. R. R.

At either location from 1000 to 1500 H. P. can be developed with little outlay of capital. Both ideal sites for factories or electric plants.

CARTHAGE INVESTMENT CO.

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On Favorable Terms,

the valuable COTTON MILL PROPERTY known as Gray's Mills, on the Patuxent River, consisting of a four-story stone mill and auxiliary buildings, with newly installed 300 horse water, steam and electric power plant, suitable for any kind of textile manufacture.

For further information address

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## FOR SALE.

Roller Mill & Woodworking Factory  
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Mill, large 4-story brick building. Nordyke & Morman Co. machinery. 100 bbls. flour and 400 bus. meal per day. Factory, large 3 story brick building. H. B. Smith machinery. Fine water power for running both mill and factory. Plenty of water for doubling capacity. On Baltimore & Ohio Railroad and Chesapeake & Ohio Railroad. Side track at doors. Fine grain and stock-raising county. For price and particulars address

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An up-to-date Boiler and Sheet Iron Manufacturing Establishment, formerly owned by M. Zier & Co., of New Albany, Ind. Equipped with air and electric improvements and a stock of merchandise on hand. Ready to begin work at once. Can be bought at a great bargain.

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fifteen miles from New Orleans, on the Southern Pacific Railroad. Plenty of water for irrigation, Rich Soil suitable for Cotton, Corn, Sugar and Truck. Will sell very cheap now on long and easy payments, in tracts to suit. Special inducements to organize planting companies. Write at once for particulars.

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We offer for sale an up-to-date milling plant, with dry kilns and planing mill attached. At the junction of two trunk lines of railroad. Timber has been estimated to cut about 22,000,000 feet. Rate to Brunswick, Ga., a deep water port, \$6.00 per car. Price \$35,000 cash.

This is a going concern and is ready for buyer to step right into a paying business. Good reasons given for wanting to sell.

BROSTON, FENDIO & CO., Brunswick, Ga.

## FOR SALE.

A New and Up-to-date Cotton Mill, situated at Monroe, La., on Missouri Pacific Railroad and Ouachita River (navigable to large steamers).

Mill of standard construction and containing latest improved machinery. The present equipment of 2500 spindles and 75 looms has been run one year, and is in the best of condition. Building, power plant, slubber, pickers, spoolers and operatives' houses sufficient for a 5000 spindle, 150 loom mill. Dynamo, machine shop equipment, slasher and cloth room machinery adequate for 10,000 spindles and 300 looms. Reason for selling: Company is a co-operative one with stock widely distributed, and it is impossible to get sufficient number of stockholders to agree to put up necessary funds to complete equipment and enlarge mill sufficiently to put it on a good paying basis. Plant as it now stands, with all accessories, including good flowing artesian well, cost \$100,000. Will sell cheap for cash, or part cash and balance on easy terms, to parties who will take property and increase sufficiently to put it on a good paying basis. Exceptionally low freight rates to northwest. Address

OUACHITA COTTON MILLS, Monroe, La.

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2000 Barrels Coal Tar.

CARLOADS AND LESS.

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Follow business lines and success  
will follow mining investments.

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Mines Examined and  
Reports Furnished

A first-class list of gold and other mining properties in North Eastern Georgia for sale or lease on royalty.

Address, CLARKSVILLE,  
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## CAPITAL WANTED.

I would like to get into correspondence with a party desiring to invest seventy-five or a hundred thousand dollars in one of the best manufacturing plants in the South. I will invest an equal amount.

I understand the business thoroughly, both practically and theoretically.

The business will stand the highest reference from Dunn or Bradstreet Commercial Agencies. Address

PRACTICAL MANUFACTURER,  
Care Manufacturers' Record.

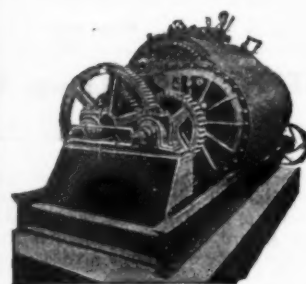
## To Paper Makers!

The undersigned have from 15,000 to 50,000 pounds of redried, damaged cotton cloth, much of the fibre sound, which they desire to have made into wrapping paper. Correspondence solicited.

ADDRESS

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Patent on Portable Stove For Sale, for Laundry and heating rooms; burns wood, charcoal or coke; sliding top and pipe and handles to carry it; plain to make. I will sell at reasonably low price. Write to E. C. Leonard, Thompson, Susquehanna Co., Pa.



## The Schwarz-System Brick Company,

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ENGINEERS.

Factories Built by Us are Built Right  
and Run Right.

Chemicals Are Not Necessary to  
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MARITIME BLDG.,

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Exhaustive tests prove  
that the finest grade of

TEXAS  
TOBACCO  
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Write for Full Information to

So Says Secretary Wilson  
U. S. Dep't of Agriculture.

CUBAN LEAF Filler and Wrapper can be grown in East Texas on line of

The SOUTHERN PACIFIC  
Soils and Climate similar to famous Yucatan Abasco District of  
Pinar del Rio, Cuba.

T. J. ANDERSON, General Passenger Agent,

HOUSTON, TEX.



## Commissioners' Sale of Marble and Lithographic STONE LANDS.

Pursuant to a decree entered by the Circuit Court of Botetourt, Va., on the 23d day of October, 1903, in the Chancery Cause depending therein, in which Wm. Clements is plaintiff and Fincastr Stone & Marble Co. is defendant, the undersigned, who were appointed by said decree as Special Commissioners for the purpose, will on the 14th day of December, 1903, in front of the courthouse in Fincastr, Va., at the dinner recess of the County Court of Botetourt, offer for sale all of the lands belonging to the Fincastr Stone & Marble Co., either as a whole or in lots, to suit purchasers, if not sold on propositions of purchase before that time. These lands have on them large deposits of marble of different colors, as well as lithographic stone, on specimens of which fine lithographic work has been done. There is also inexhaustible quantities of the finest building stone on these lands, and fine water-power sufficient to work the quarries.

TERMS—One-third of the purchase money will be required to be paid in cash on day of sale, and the residue of purchase money on a credit of two equal annual payments due in one and two years from day of sale, with interest, the purchasers executing bonds with good security, with waiver of homestead exemption, and title retained till all of the purchase money due on the sale is paid off in full.

Correspondence solicited.

Respectfully,

W. B. SIMMONS,  
C. M. LUNFORD,  
Special Commissioners.

Bond required of Special Commissioners executed by Wm. B. Simmons, with good security.  
J. W. MATHENY, Clerk.

## Valuable Mill Property FOR SALE.

Having decided to sell out, on account of personal differences, we will sell at public auction, December 8, 1903, at 2 o'clock, the following desirable wheat and corn mill, known as the Orange Mills, and situated in the town of Orange, Va. (the county-seat), and with following railroad connections by switch at mill door—C. & O. R. R., So. R. R., P., F. & P. R. R.

This is the most modern and complete mill in Piedmont Virginia, and has practically been rebuilt and equipped with new machinery within last year. Its capacity is as follows:

- 1 100-barrel Allis-Chalmers roller mill complete with Universal beater.
- 1 600-bushel Richmond City cornmeal rig.
- 1 10-ton Richmond City chop rig.
- 1 Reynolds 85 H. P. Corliss engine.
- 1 Reynolds 100 H. P. boiler.
- 1 heater and pump for same.
- 1 25,000-bushel grain elevator.
- 1 storage-room 16x90.
- 1 frame mill building, four stories, about 40x55.

All in good order, and running perfectly. Also all other necessities around mill necessary to its operation, such as oils, sacks, fuel, furniture for office, etc. Above sold as a whole, and covers about two acres of land, with cornhouse, cooper shop and coal bins.

TERMS—One-half cash, balance 60 and 90 days, secured by deed of trust carrying 6 per cent, until paid, or all cash, at option of purchaser.

This plant is situated in one of the finest wheat sections in the State, and has been a financial success from its start.

We will also sell 1 60 H. P. second-hand Atlas side-crank engine.

- 1 80 H. P. second-hand boiler for same.
- 1 heater for boiler.
- 1 pump for boiler.
- 1 24-inch Nurdyke & Marmon portable mill.
- 1 30-inch Richmond City corn mill.

BOOTON & LYNE,  
Orange, Va.

Inspection of plant solicited.

## WANTED.

Logging Contractors. Saw Mill Contractors. We have fifteen million feet of Cypress Timber which we desire logged and sawn. If interested either in logging or sawing write, giving size and kind of steam logging machine, or size, make and capacity of saw mill. A band saw mill is required. Give references.

J. S. BAILEY & CO., Abbeville, Ga.

## FOR SALE. Pyrites Ore.

Notice is hereby given that sale will be made of cargo recently imported ex-S.S. "Bernilla," shipped by Societe Maritime and Commerciale, of Antwerp, and known as Coronado pyrites ore, now in store at the Seaboard Air Line terminals, Savannah, Ga.; the sale to be conducted at the said terminals in Savannah, Ga., on December 11, 1903, during usual sale hours, and to be for account of whom it may concern. The cargo consists of about 4165 tons of 2000 pounds each total, of which about 578 tons is large unbroken lump ore, about 2747 tons is furnace size lump ore, about 853 tons is pebble size ore, and about 487 tons is fine ore. The analysis of this ore, by two reputable chemists, shows about 1.50 per cent. moisture and about 46.40 per cent. sulphur.

Virginia-Carolina Chemical Co.

## BRICK YARD for Sale.

30,000 capacity; Chambers machine with all necessary kilns, etc.; 20-year lease on 20 acres of clay; good local demand and within 47 miles of Atlanta; best railroad facilities; wood plentiful at \$1.75 per cord; yard now in operation at a good profit; object of selling, other business requiring our attention. Price reasonable. Address CARTERSVILLE BRICK CO., Cartersville, Ga.

Analysis of Limestone and Slate properties for sale by

J. S. DAVITTE, Aragon, Ca.

Limestone	Slate	Fineness
Silica..... 2.125	57.405	Initial set 2 hrs. 15 min.
Oxide Alumina 0.285	23.655	Cement, 3 Sand, 260.
Oxide Iron..... 0.595	4.455	Heat 7 days 695 lbs.
Lime..... 54.065	3.235	Heat 28 days 790 lbs.
Magnesia..... 0.975	3.235	
Volatile..... 42.335	0.805	

ADVERTISER requires partner to increase capital for the purpose of installing a Folding-box plant, or other manufacture, in the South. New building and healthy location. Address

BESEX, care Mfrs. Record.

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Agents in different parts of the United States to handle our output. For information apply to

BROWN CORLISS ENGINE CO.  
CORLISS, WIS.

We are prepared to attend to all matters for you regarding your exhibits at the

WORLD'S FAIR.

GENERAL BUSINESS—LEGAL—CONSTRUCTION WORK

The Thompson Agency,  
BOX 882. ST. LOUIS, MO.

## FOR SALE.

Cotton Machinery Taken From a Plant  
Closing Down and as Good as New.

- 53 44" Lowell Looms.
- 36 36" Lowell Looms.
- 1 40" Curtis & Marble Finishing Machine.
- 1 48" Boomer & Boschert Baling Press.
- 1 45" Stafford Folder.
- 1 48" Dinsmore Sewing Machine.
- 3 Hughes & Russum Beams.

Prices given on application.  
Machinery all on the floor and can be examined.

JAMES S. GARY & SON,  
Baltimore, Md.

## FOR SALE.

One 14 1/2"x24" heavy throttling engine, A1 condition. One 14"x19" automatic Corliss, new. One Corliss compound, used but a short time, good as new. 11"x22"x17"x24" and one Fay four-side planer, 12"x17"x24". We are offering bargains in the above. Address

VIRGINIA MACHINE CO., Basic City, Va.

Unless you read the  
Manufacturers' Record  
regularly you cannot keep  
fully advised as to the  
industrial and railroad  
advancement of the South  
and Southwest.

# Bargains in Machinery

FOR IMMEDIATE  
DELIVERY.

## BOILERS.

- 1 267 H. P. Abendroth & Root, 150 lbs. pressure.
- 1 250 H. P. and 300 H. P. Heine, 150 lbs. pressure.
- 1 72"x16" return tubular boiler, 105 lbs. pressure.
- 1 66"x15" return tubular boiler, 100 lbs. pressure.
- 1 42"x14" return tubular boilers, 100 lbs. pressure.
- 1 vertical boiler, 50 H. P.

## ENGINES.

- 1 22x48 Hewes & Phillips Corliss.
- 1 17x42 Brown, cut-off, 100 r. p. m.
- 1 20x48 Harris Corliss.
- 1 14x28 Delamater Corliss.
- 1 13x21 Buckeye, tangye bed, 125 h.p.
- 1 16x24 Atlas automatic.
- 1 9x8 Climax automatic.
- 1 16x30x48 Hamilton Corliss, tandem.
- 1 13x20 1/2x15 Armstrong & Sims, c. c.
- 1 13x19x15 McIntosh & Seymour, tandem.

## COMPRESSORS.

- 1 24 and 24x30 Rand Straightline type C, steam driven, 1320 ft. free air.
- 1 12 and 14 1/2x14 Ingersoll-Sergeant.

## ELECTRICAL.

Send for our complete list of Generators and Motors of all types and voltages.

## THOMPSON SON & CO.

114-118 Liberty St. NEW YORK CITY.

## FOR SALE.

- BOILERS—80 h. p. Hor. Tubular.....\$240
- 250 " Watertube..... 440
- ENGINES—30 " McIntosh & Seymour 160
- 15 " Gas Engine, "Otto" 180
- 60 " Westinghouse..... 280
- 125 " N. Y. Safety..... 680
- 175 " Corliss..... 980
- DYNAMOS—120 lights Edison..... 138
- 180 " Onondaga..... 135
- 200 " Mather..... 150
- 270 " Edison..... 190
- 510 " Edison..... 298
- 1000 " Edison..... 540

American Electric Supply & Mfg. Co.  
27 Thames St., New York City.

## MENGEL'S MACHINERY EXCHANGE

15 H. P. Geyser Portable Boiler and Engine on wheels. 25 H. P. Portable Duval on skids. 10 H. P. Baxter Engine and Boiler combined. 35 H. P. White & Middleton Gas or Gasoline Engine, 12" by 36". 60 H. P. Hamilton-Corliss Engine, directly connected to 25-ton Linde Ice Machine. 5 and 10-ton Vertical Compressors. 4 25 and 35 H. P. Horizontal Engines. Sharp's Collar and Job Ironer. Band Starcher and Ironer. 50 gal. Copper Starch Kettle. 60-light Dynamo. 25 170 volt Manhattan Arc Lights. Cylinder and Job Printing Presses. Paper Cutters. Complete Plants and Machinery of all kinds Bought, Sold and Exchanged. Nearly new 25 H. P. White & Middleton Marine Gasoline Engine.

Mengel's Mach'y Exchange, 12 E. Lombard St., Baltimore Md.

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1 right hand Prescott band mill, 8 in.x8 ft. 2 dynamos, 300 light capacity. 8 horizontal tubular boilers, with dome, size 5 ft.x16 ft., 44 1/2 in. tubes. 1 fan, 9 ft., engine attached. 1 fan, 7 ft. belted. The above items are all in good order, and will be sold cheap for cash. For further particulars inquire of

YELLOW POPLAR LUMBER COMPANY,  
COAL GROVE, OHIO.

## FOR SALE.

Two Hot Blast apparatus made by American Blower Co., 48 inch wheel. 4000 feet piping; were new eight months ago.

Wm. E. Uptegrove & Bro.

No. 463 East 10th Street, New York City.

## 80 H. P. Special Electric NEW ERA GAS ENGINE

with friction clutch. Nearly new. Cheap if taken soon. We need the room.

THE CHAS. A. STRELINGER CO.  
96 to 110 Bates Street, Detroit, Mich.

## FOR SALE AT HALF PRICE.

One brand new Lapping Machine, in perfect condition.  
HANNA & KALMBACH, New Orleans, La.

Second-hand Dynamos, Motors and Electrical Appliances. All money savers. Repair anything. Have you a Dynamo or Motor for sale?

GUARANTEE ELECTRIC CO.  
133-139 S. Clinton St., CHICAGO.

## STEAM PLANT BARGAIN,

AT ZENIA, O.

We offer the following for delivery  
December 1st.

## Boilers.

- 3 72x16 Horizontal Tubular Boilers—2 allowed 95 lbs. steam, 1 allowed 100 lbs. steam. 2 Pumps for same. 1 large Heater.

## Engines.

- 1 fine 16x42 left hand Hamilton Corliss Engine. 1 15x15 Center Crank Phoenix Automatic, fine order. 1 8x12 Ball Automatic Centre Crank, in fine order. Belting used on above and on electric machines.

## Shafting.

- 1 Line 5" Shafting with floor stands, Clutch Pulleys and other Pulleys. 1 Idler. For full particulars write us at Cleveland, O.

Cleveland Belting & Mach. Co.  
CLEVELAND, O.

## ENGINES—Compound.

- 1 14 & 25x16 Ball & Wood, self-contained.
- 1 14 & 23x16 Tandem Ames.
- 2 13 & 23x18 Tandem Williams.
- 1 13 & 20 1/2x15 Cross Armstrong & Sims.
- 1 13 & 19x15 Tandem McIntosh & Seymour.
- 1 12 & 21x16 Cross Erie Ball.
- 1 18 & 30x16 Westinghouse.
- 1 16 & 27x16 Westinghouse.
- 1 14 & 24x14 Westinghouse.
- 1 13 & 22x13 Westinghouse.

## Simple.

- 1 18 1/2x18 Armstrong & Sims.
- 2 16x16 Ball & Wood.
- 1 15 1/2x24 Buckeye Tangye frame.
- 1 14 1/2x24 Buckeye Tangye frame.
- 1 14x16 New York Safety Power Co.
- 2 13x18 Harrisburg Ideal.
- 1 11x12 McIntosh & Seymour.
- 1 9 1/2x10 Armstrong & Sims.

## BOILERS.

- 1 350 H. P. Franklin Water Tube, 140 lbs.
- 2 66x16 Return Tubular.
- 2 54x16 Return Tubular.

## Rossiter, MacGovern & Co., (Inc.)

17 Battery Place, New York City, N. Y.

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Missouri Trust Bldg., ST. LOUIS, MO.

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Fifty Whitin Welman Top Flat Cards, with 40 tops 40 ins. wide. Cylinder 42 x40 ins. Doffer 40x18 ins. Floor space 8 ft. 3 ins.x5 ft. 9 ins., with collars. Production 125 lbs. per day. Some of these cards are only 3 years old, balance 8 years. They can be seen running. Also 150 sets Steel Clothing in extra good condition; 100 Doffers; 150 Mason Looms, 44"; 10 Ashworth Revolving Top Cards. For full information and price apply to

WM. J. DUNN,  
Fall River, Mass.

## FOR SALE—ENGINES.

14 1/2x24 Cooper automatic; 9x14 Atlas automatic; 12 1/2x24 slide valve; 14x42 Corliss engine; 11x16 center crank; 13 horse Russell traction; 10 horse traction; 25 horse Blandy skid engine and boiler; 20 horse Nagle portable engine and boiler; two 14 1/2 x24 Porter-Allen engines; one 75 horse tubular; 40 horse; 25 horse; 35 horse; three 12 horse portables; one fire engine, Cole Bros. make. One 6 horse new Scotch boiler; 6 horse Scotch boiler and engine mounted on skids. One heavy boiler plate punch, all complete, \$150. One McGowan duplex pump, 3 1/2" suction, brass cylinders. 300 horse Stilwell & Berce heater. 150 horse Brownell heater. 3 horse gasoline engine. 100 boilers and engines, different sizes, at one-third their actual value.

D. L. CASEY MACHINE CO.  
SPRINGFIELD, OHIO.

## Blower Bargains.

Special offer in Roots Second-Hand Blowers, all sizes up to No. 8.

Address H. M. PAPWORTH,  
190 Liberty St., New York.

## LATHES.

No. 72 14"x5' Lodge & Shipley.  
No. 73 14"x5' Lodge & Shipley.  
No. 49 20"x10' Taper, Lodge & Shipley.

### THE LODGE & SHIPLEY MACHINE TOOL CO.

CINCINNATI, OHIO,

U. S. A.

## FANS.

Central station man's opportunity to increase the day load. We offer for immediate delivery, all f. o. b. Cincinnati, the following 125 cycle fans:

150 G. E. swivel and turn, 12 in., 104 volt, \$5.00 each.  
150 Emerson solid, 12 in., 52 volt., \$3 each.  
200 Westinghouse solid, 13 in., 52 volt., \$3.50 each.  
100 G. E. swivel and turn, 12 in., 52 volt., \$4.00 each.

JOHN A. STEWART ELECTRIC CO.  
430 Sycamore St., Cincinnati, Ohio.

## Second-hand Tools

Worth Considering.

30" Brainerd automatic gear cutter.  
Garvin die slotter.  
Stiles heavy geared reducing press, 10" stroke.  
No. F3 Ferracute punch press.  
70" gang radial drill.  
No. 16 Garvin plain miller, with vertical spindle attachment, capacity  
24" Hendey shaper.  
No. 4 Warner & Swasey screw machine, friction head wire feed and tools.  
Photo and description on application.

### THE GARVIN MACHINE CO.

Spring and Varick Sts., New York City.

## FOR SALE.

\$ 1 18x42 Left Hand Harris Corliss Engine.  
" 1 20x48 Left Hand Hamilton Corliss Engine.  
" 1 24x48 Right Hand Brown Corliss Engine.  
" 1 250 K. W. General Electric Generator, speed 425, voltage 500.  
" 1 200 K. W. Generator. 500 volts.  
" 1 24x48 Left Hand Brown Corliss Engine.  
" 1 16x42 Right Hand Hamilton Corliss Engine.  
" 1 20x36 Porter Slide Valve Engine.  
" 1 20x48 Left Hand Wheelock Corliss Engine.  
Write for full description.

### Clyde Machine Works

39th and Union Ave., CHICAGO, ILL.

### SOME FINE CORLISS ENGINES.

18"x36" Fishkill, 200 H. P.  
16"x36" Fishkill, 150 H. P.  
16"x36" Harris, 150 H. P.  
14"x24" Wright, 100 H. P.  
10"x24" Wetherill, 50 H. P.

### WICKES BROS.

95 Liberty Street, NEW YORK CITY.

## FOR SALE.

25 horse power rebuilt Nash Gas Engine, direct connected to 15-K.W. Crocker-Wheeler dynamo.

Also one 30-K.W. 115 volt compound Siemens & Halske Bi-polar Dynamo.

GRAHAM BROS. CO., Hudson & 13th Sts., N.Y.

### FOR SALE.

#### Partial List Second-Hand Machines

13"x18" Pratt & Whitney, rise and fall rest, with taper.  
14"x24" Putnam, rise and fall rest.  
14"x26" Frontis, rise and fall rest.  
14"x26" Blaisdell, rise and fall rest, with taper.  
15"x26" Foster, rise and fall rest.  
15"x26" Prentiss, rise and fall rest, with taper.  
15"x28" Pratt & Whitney, rise and fall rest, with taper.  
16"x17" M. B. & O., plain rest.  
16"x19" Fay & Scott, compound rest.  
18"x28" Reed, plain.  
18"x28" Lodge & Davis, compound rest and taper.  
24"x10" No Name, incomplete.  
26"x8" Betts Lathe, compound rest.  
30"x8" Stark, plain.  
36"x14" Betts Lathe, compound rest.  
No. 1 B. & O. Turret.  
No. 14 Garvin Special Forming Turret Lathe.  
14"x6" Lodge & Barker Turret Lathe.  
16"x8" Johnson Turret Lathe.  
18"x8" Lodge & Davis Chocking Lathe.  
Six-Spindle Mills, Cement & Co. Arch Bar Drill.  
24" Blackford Upright Drill.  
20" Barnes Upright Drill.  
Three-Spindle Upright Slat Sensitive Drill.  
Three-Spindle Garvin Sensitive Drill.  
24"x24"x8" Sellers Planer, one head.  
43"x43"x10" Whitcomb Planer, two heads.  
43"x43"x10" Betts Planer, one head.  
16" Smith & Mills Shaper.  
No. 2 Keyseat Milling Machine.  
No. 2 Garvin Plain Milling Machine.  
No. 1 B. & S. Universal Milling Machine.  
No. 44 Garvin Plain Miller.  
No. 2 Garvin Plain Miller.  
2 No. 2 Garvin Plain Millers.  
1 No. 44 Brainerd Plain Miller.  
No. 4 Schlenkers Double-Head Bolt Cutter.  
3" Pratt & Whitney Outting-Off Machine.  
12" Lowell Machine Co.'s Slotter.  
Double-Head Pratt & Whitney Horizontal Boring Mill.  
Cold Saw, 18" Blade, Pump and Pan.  
20" Springfield Knife Grinder.  
Wells Bros. Cutter and Reamer Grinder.  
Springfield Tool Grinder, 34" Wheel, with pump.  
2 Speed Lathes.  
4 H. P. Portable Boilers.  
Also a complete line of new machines. Correspondence solicited.

Brown & Ertman Machinery Co.,  
Pittsburg, Pa.

### FOR SALE.

1 50 H. P. Engine, side crank, self-contained, 12x18 cylinder, 66" fly wheel, 14" face. Built by Casey & Hedges Co., Chattanooga, Tenn.  
3 25 H. P. Boilers, Scotch marine, return tubular, stacks 25", 30" diameter. Built by same parties as engine. All appurtenances and pipe connections for engine and boilers.  
1 Centrifugal Pump, 2" discharge, 2 1/2" suction. Made by Williamson, Hockessin, Del.  
4 horse power Hoisting Drums, with automatic safety attachment. Made by Thos. Carlin's Sons, Allegheny, Penn.  
1 Fairbanks Trussed Lever Scales, platform 10'x9'3/4". Capacity, 26,000 lbs.  
1 Fairbanks Portable Scales Capacity, 1000 lbs. Large platform for wheelbarrows.  
1 Imhäuser Watchman's Time Detector, 10 stations.  
2 Honnot Clay Presses, square chambers, 73 each. In perfect condition.  
1 Honnot Slip Pump. In perfect condition.  
Complete Clay Washing Machinery. Made by Williamson, Hockessin, Del.  
A large lot of Pulleys, wood split and iron, 6" to 52" diameter and 6" to 28" face. Also, Belting, canvas and rubber, 12" to 52" lengths, 6" to 14" face. Also, Shafting, 1 1/2" and 2 1/2" diameter, 12" and 20" long, with bearings.  
All the above machinery is in fine condition, ready for use. Has been in use about three years, with best of care. Will be sold very reasonably.  
This machinery, &c. is at our plant at Webster, N. C., and will be delivered f. o. b. cars Sylva, N. C. We invite inspection.

KAOLIN MANUFACTURING CO.  
WAYNESVILLE, N. C.

### 2ND-HAND TOOLS.

**Lathes.**  
12 in. x 4 ft., Hill Speed (9).  
16 in. x 6 ft., Blaisdell R. & F.  
18 in. x 8 ft., F. E. Reed.  
18 in. x 8 ft., Field, R. & F.  
20 in. x 4 ft., N. Haven P. R.  
24 in. x 18 ft., Blaisdell.  
26 in. x 18 ft., Fitchburg.  
27 in. x 18 ft., Lawrence C. R.  
Axle Lathes, Cement (3).  
**Planers.**  
22 in. x 3 ft., Lawrence.  
26 in. x 6 ft., Pond, Chuck.  
30 in. x 8 ft., N. Y. S. E. Co.  
32 in. x 16 ft., Sellers 2 H's.  
**Shapers.**  
16 in. Western Geared.  
22 in. Hendey, New Vise.  
**Drills.**  
38 in. 1 1/2 in. Gap Slid. H'd.  
36 in. N. H., complete.  
Boiler Mkr's' Susp'nion.  
4 Spindler, heavy.  
**Screw Mchcs.**  
Nos. 6, 1, 2 and 3 1/2 Autos.  
P. & W.  
No. 2 B. & S. Automatic.  
1-18 in. Spencer Auto. for Colls.  
Hartford 2 in. and 1 in. Auto's.  
No. 60 Garvin 1/2 in. V. F.  
Write your requirements.  
O. L. BENNETT, 113 Liberty St., New York

If you wish to keep posted on the progress of the South, read the Manufacturers' Record. Price \$4 a year.

## A Tip on Machinery.

THIS is "between seasons." Buy now, because the demand will be greater after the holidays, and firmer prices will obtain. Don't wait until the last minute, but anticipate your needs. Write for my November 20th Bargain Sheet and Price List.

WILLIS SHAW,  
171 La Salle Street, CHICAGO.

### BARGAINS FOR QUICK DELIVERY.

No. 3 Gates Crusher.  
No. 3 Gates Crusher.  
No. 5 Style B, Gates Crusher.  
Double column Drop Hammer, cylinder 14"x30", fine order.  
Good Second-Hand Engines.  
12-ton Kelly Roller, fine as new.  
New Well Drilling Machine, cheap.  
Marion AA Shovel, fine condition.

CONTRACTORS' SUPPLY & EQUIPMENT CO., 232 Fifth Avenue, CHICAGO.

## BOILERS AND ENGINES.

### BOILERS.

6 72"x16" Horizontal Tubular, 4" tubes.  
3 66"x16" Horizontal Tubular, 4" tubes.  
3 60"x18" Horizontal Tubular, 4" tubes.  
12 60"x14" Horizontal Tubular, 4" tubes.

### PORTABLE.

2 200 H. P. Vertical, 3" tubes.  
1 100 H. P. Locomotive Type, 3" tubes.  
1 80 H. P. Locomotive Type, 2" tubes.  
2 80 H. P. Locomotive Type, 3" tubes.  
2 150 H. P. Cahall Water Tube.

### ENGINES.

10x14" Russell Automatic.  
11x10" Westinghouse Standard.  
12x24" Buckeye, style "A."  
13x12" Ball Automatic.  
14x16" Greene Automatic.  
15x15" Taylor-Beck Automatic.  
13x22x13" Westinghouse Compound.  
16x12" Hamilton Corliss.  
18x20" Slide Valve Engine.  
20x24" McIntosh-Hemphill Slide Valve.  
23x60" Corliss.  
24x33" Buckeye, style "B."  
24x48" St. Louis Corliss.  
26x48" Corliss.  
28x60" Corliss.  
32x54" Bates Corliss.  
38x72" International Power Corliss.

This is but a small part of our stock, but our complete list will be mailed upon application.

WICKES BROTHERS  
PITTSBURGH, PA.

ALSO

SAGINAW. NEW YORK. CHICAGO.

### FOR SALE.

One Second-hand "BERRYMAN" HEATER AND PURIFIER, in perfect condition and guaranteed good as new. Will sell cheap for cash. Address

M. F., care Mrs. Record, Baltimore, Md.

### FOR SALE.

New I Beams and Channels cut to lengths for prompt delivery.  
We are always in the market for Cylinder Boilers, Smoke Stacks, Flues and Second-Hand Pipe. Also Scrap Iron and Steel in any quantity.

HENRY A. HITNER'S SONS,  
Aramingo Ave. and Huntingdon St., Philadelphia.

### BARGAIN—\$2600 EACH.

3 500 H. P. 17 and 33 1/2"x28 Condensing Lake Erie Engines, 138 R. P. M. Excellent condition.

CHARLES F. JOHNSON,  
908-7 Ellicott Square, BUFFALO, N. Y.

WE SELL  
Engines, Boilers,  
Pumps and Quarry  
Supplies,  
Concrete Mixers,  
Horse Rollers,  
Steam Drills,  
Air Compressors,  
Belting, Hose,  
and a full line of  
Contractors' Supplies.

### A SMALL AMOUNT

will buy

### Pulverizing Machinery

for  
Cement, Barytes, Taic, Foundry Facing, Etc.  
We have three Cylindrical Pulverizers or Pebble Mills, made by the West Pulverizing Machine Co. These Mills will reduce your material cheaply and quickly.

They are New and Complete  
With all parts.

FOR SALE BY  
BAKER, STILLWELL and HART,  
Birmingham, Ala.

## For Sale.

90 36 in. Franklin-Wellman Cards, 45 of the 90 newly clothed and in good condition.  
6 Potter & Atherton 36 in. Lappers, 3 intermediates and 3 Finishers, all in fair condition.  
6 Railway Heads.  
2 Hardy Card Grinders.  
Also Drawing for 90 cards.  
Call early as we need the floor space.

Continental Manufacturing Co.  
CHARLOTTE, N. C.

### FOR SALE.

1 22x52 R. H. Watts Campbell Corliss Engine.  
1 10x12 Ideal Automatic Engine.  
1 10x7x10 Worthington Duplex Pump.  
1 15 ton Road Roller for sale or rent.  
1 Little Giant Steam Shovel.  
1 10x7x10 Worthington Duplex Pump.  
Iron Tanks, 300 to 1000 gallon capacity.

JAS. S. BRADEN, 26 Cortlandt St., New York.

### Otto GAS ENGINE for Sale.

85 to 90 indicated H. P.; diameter of cylinder, 18 1/2 inches; stroke, 24 inches; single acting; weight about 12 tons; two fly wheels, each having 3 grooves for 1 1/2-inch rope.

MORGAN SPRING CO.,  
WORCESTER, MASS.

### FOR SALE.

Several Hundred Tons of  
1/4 inch

## Open-Hearth Tank Plate

63 x 156-inch.

E. KEELER CO., Williamsport, Pa.

### FOR SALE.

One Sturtevant hot air blower and piping.  
One 150 or 200 horse power tubular boiler.  
One lot iron piping of all sizes.  
One Dean duplex pump.  
Some large shafting. Lot of brick.  
One Boss power press.  
Lot Pine Fibre. Address,

Dr. T. G. CROFT, Aiken, S. C.

### New and Second-Hand Iron Tools and Woodworking Machinery

Corliss and Double Valve Engines for Trolley Roads and Electric Lighting Stations.

H. C. BAKER & CO.,  
114 N. 3d Street, Philadelphia, Pa.



### In Stock. Immediate Delivery. Rebuilt and Guaranteed.

20" x 40" x 60" Cross Compound Corliss. 28" x 60" Wetherill Corliss. 26" x 60" Wetherill Corliss. 21" x 42" Rickards Corliss. 20" x 45" Frick Corliss. 18" x 42" Slater Automatic. 22" x 32" Watertown. 18" x 24" New York Safety Vertical. 16" x 27" x 16" Westinghouse Compound. 14" x 24" x 14" Westinghouse Compound. 12" x 22" x 20" Porter-Allen Automatic. 3 1/2" x 20" x 12" Westinghouse Compound. 16" x 36" Wetherill Corliss. 16" x 42" Harris Corliss. 16" x 16" Green Automatic. 15 1/2" x 15" Armstrong & Sims. 15 1/2" x 30" Buckeye. 15" x 30" Russell Automatic. 15" x 18" Taylor-Beck Automatic. 15" x 16" Ball Automatic. 14 1/2" x 15" Armstrong & Sims. 14 1/2" x 15" McIntosh & Seymour. 13" x 12" Armstrong & Sims. 13" x 14" Vertical Fitchburg Automatic. 12" x 24" Buckeye Automatic. 12" x 15" Ide Automatic. 12" x 12" Armstrong & Sims. 11" x 12" Atlas Automatic. 11" x 12" Chandler & Taylor Automatic. 10" x 16" Buckeye Automatic. 10" x 15" Atlas Automatic. 3 7/8" H. P. Westinghouse Standard Automatics. 2 5/8" Westinghouse Juniors. And many others. Stock is constantly changing. Let me have a list of your wants.

#### BOILERS.

2 66" x 18" Horizontal Tubulars, 125 lbs. steam. 6 66" x 16" Horizontal Tubulars, 120 lbs. steam. 2 150 H. P. Wood Water Tube, practically new. Large stock of new and second-hand Horizontal Vertical and Locomotive Boilers. 2500 H. P. Goulet Heater. 3 500 H. P. Berryman Heaters. 60 large Steam Pumps, up to 12" suction, assorted sizes. 50 H. P. Otto Gas Engine. 40 H. P. Otto Gas Engine. Large stock of Dynamos, Iron and Wood Working Machinery. Send for Special Catalogue of 2300 pieces.

### FRANK TOOMEY,

127-131 N. Third St. Philadelphia, Pa.

#### ENGINES.

One 18x42 Harris-Corliss Engine.  
One 16x20 S. C. Washington Iron Works' Engine self-contained.  
One 13x22 S. C. Cardwell Engine.  
One 11x18 C. C. Talbot Engine, Box-bed.  
One 12x16 S. C. Engine.  
One 11x15 Richmond Locomotive Works' S. C. Engine.  
One 11x14 R. & C. C. Engine.  
One 7x8 Vertical Engine.  
One 6 H. P. Vertical Engine.  
One 4 H. P. Vertical Engine.  
One 20 H. P. Farquhar Traction Engine.  
One 15 H. P. Aulman & Taylor Traction Engine.  
One 12 H. P. Birdall Traction Engine.  
One 10 H. P. Frick Engine and Boiler mounted on wheels.

#### BOILERS.

One 80 H. P. High-Pressure R. T. Boiler, good for 120 lbs. steam working pressure.  
One 80 H. P. R. T. Boiler.  
One 70 H. P. R. T. Boiler.  
One 60 H. P. R. T. Boiler, Half-Front.  
One 50 H. P. R. T. Boiler, Full-Front.  
One 50 H. P. Economic Boiler.  
One 40 H. P. Economic Boiler.  
One 40 H. P. R. T. Boiler, Half-Front.  
One 25 H. P. R. T. Boiler, Half-Front.  
One 20 H. P. R. T. Boiler, Half-Front.  
One 15 H. P. Locomotive Type Boiler on wheels.  
One 30 H. P. Vertical, and several smaller sizes. Also several sizes of pumps and other machinery. The above are in A-1 condition. Write for particulars.

Jos. A. Waters & Co., Richmond, Va.

### Second Hand Machinery FOR SALE BY Riverside Mills, of Augusta, Ga.

One AD Cook Artesian Well Pump, described as follows: one 8x36 steam cylinder, one air chamber, one discharge check valve, one 3x water cylinder, one set 3x valves, 125x 3x IJ casing and 7 number 4 poles. Two American Stokers complete engine, blowers, etc., also extra set tyure blocks and dead bars.  
One Cotton Tie Riveting Machine.  
One Vacuum Pump (Deane make).  
One No. 2 Nonpareil Mill.  
One Beane Pneumatic Coating Machine.  
One Simplex Engine.  
One Air Compressor (belt power) and Receiver.  
Three Chain Hoists.  
One DA DB Pulley 7 1/2" x 31 1/4" x 4 1/2" K. S.  
One DB Pulley 10 1/2" x 12" x 4" K. S.  
One DB Pulley 10 1/2" x 14" x 4 1/2" K. S.  
One Pulsmeter described as follows: Suction 3", discharge 2 1/2", steam 1/2", to 1 1/2". Patented September 24, 1872 and March 8, 1881.  
Two 90 h.p. Boilers, fronts, grate bars, breast stays, rods, water columns, gauges, uptake and breeching complete.

#### PRESSURE PUMPS.

For high duty, outside packed, plunger type. Worthington Compound Duplex, 12" x 17" x 6" x 15". Worthington Duplex, 18" x 5" x 18". Worthington Duplex, 17" x 7 1/2" x 15". Knowles Single, 10" x 5" x 10". Pumps for all services, over 200 in stock.

#### WICKES BROS.

95 Liberty Street, NEW YORK CITY.

**FOR SALE**  
Locomotives, New and 2nd Hand.  
Cableway 600 feet long complete.  
200-ton 56 lb. Relaying Rails.  
40-ton 70 lb. Relaying Rails.  
45-ton 25 lb. Relaying Rails.  
90-ton 80 lb. Relaying Rails.  
New Rails, all weights.  
1 1/2-yd. Marion Improved "A."  
1 1/2-yd. Bucyrus, 45-ton.  
**CLARK & HINES**  
Baltimore, Md.  
R. R. Equipment, Mine and Contractors' Supplies.

### BARGAINS IN DYNAMOS AND ENGINES

No. 321. One 18 1/2" x 18" Armstrong & Sims Engine, complete with all oil cups and lubricator, cast iron sub-base, carrying wheel 7 1/2" dia. x 2 1/2" face; governor wheel 7 1/2" dia. x 10" face; 200 H. P. at 175 r. p. m., 90 lbs. steam pressure; together with one Stanley Electric Mfg. Co. Dynamo, 150 K.W., type 2 P, volts 1100 and 2200; alternations 2000, speed 1000; A. C. belted machine.  
No. 297. One 12 1/2" x 13" Fitchburg Automatic Centre Crank Engine with granite sub-base; belt wheel 60" dia. x 1 1/2" face; governor wheel 45" dia. x 12" face; complete with all oil cups and fittings, together with one 35 Arc Light Thompson-Houston Dynamo, two pole, with automatic regulator, fitted with Thompson Air Blast, with pulley and oil cups, direct current.  
No. 37. Two Weston 15" x 16" Centre Crank Automatic Engines, fly wheel 7 1/2" x 12". These engines are fitted up with shaft and clutches to throw either engine out or in, with one 60 K.W. Stanley Generator, A. C. 2200 volts, 1000 r. p. m., two phase. Also other engines, boilers, pumps, etc. Send for List No. 10.

All of the above machinery is in excellent condition, ready for immediate delivery.

Huntington Machinery & Supply Co.  
WILKES-BARRE, PA.

### WANT TO SELL.—1 5-ton Electric Crane.

10 K. W. Motor, almost new. 1 G. & G. Air Compressor, 120 cubic ft. 2 Vacuum Pumps, 12x10x9 and 12x20x9, practically new. 1 200 H. P. Side and 1 100 H. P. Center Crank, 1 50 and 40 Side Crank, 4 10 to 25 H. P. Center Crank Self Contained Horizontal Engines. 1 8x10 Erie Ball Automatic Engine. 1 50 H. P. Vertical Boiler, excellent condition. 1 80 H. P., 2 50, 9 65, 4 125 and 5 150 Horizontal Return Tubular Boilers, excellent condition, complete. 1 8x5 D. C. S. D. Lidgerwood Hoister. 1 Webster Heater and Purifier for 500 to 1000 H. P. Boilers. Lot of high pressure and tank pumps, tanks, motors, dynamos, rock drills, rails, pipe, wire hoisting rope and cables. Anything you desire.

**WANT TO BUY.**—6 150 and 125 H. P., 2 100 H. P. Horizontal Return Tubular Boilers, complete with stack. High Pressure and Tank Pumps. 1 500 H. P. Vertical Water Tube Boiler or 2 250 H. P. Wooden and Iron Tanks, Pipe, Wire Cables 1 1/2" and up in diameter; Rails—above to be second hand. WE BUY ANYTHING YOU HAVE TO OFFER, including Second-hand Vertical Boilers and Engines, if cheap and in good condition, from 4 H. P. up to 25 H. P.

#### ANTHRACITE MACHINERY & SUPPLY CO.

Long Distance Telephone. ALLENTOWN, PENNA.

### FOR SALE Cotton Machinery. of Entire Plant. 154—LOOMS—154 10—QUILLING MACHINES—10

Complete DYE HOUSE and ALL other machines for weaving cotton. Thousands of feet BELTING, SHAFTING, PULLEYS, HANGERS, Etc., Etc.

ALL will be disposed of at great sacrifice, as the entire plant has been sold for a wood working business.

American Oak and Hickory Reed Co.  
NEWPORT, TENN.

#### FOR SALE.

250 tons 35 lb. relays, with splice bars, good condition.  
1 (Dickson Manufacturing Co.) 36-in. gauge, 35-ton locomotive, with tender.  
12 15-ton capacity, side dump, 36-in. gauge, hopper bottom ore cars, by Tredegar & Co., Richmond. All the above material subject to inspection at McDowell, Allegheny Co., Va.  
ALLEGANY ORE & IRON CO.  
Clifton Forge, Virginia.

#### FOR SALE.

Immediate delivery at an attractive price.

### 48-in. Riveted Steel Pipe

1/2 and 3/4 inch in thickness.

E. KEELER CO., Williamsport, Pa.

#### FOR SALE.

1 18" Turret Lathe.  
1 18" Engine Lathe.  
1 14" Engine Lathe.  
1 12x14 Upright Engine.  
1 12x14 Atlas Engine.  
3 Gasoline Launches.  
1 6 H. P. Marine Engine.

Let us have your requirements. We can fill them.  
PATAPSCO MACHINE & SUPPLY CO.  
Baltimore, Md.

#### FOR SALE.

**Five Blowing Engines.**  
36" Steam Cylinder, 84" Air Cylinder, 54" Stroke.  
Engines were built by Cuyahoga Engine Works and can be seen in operation at our plant at Columbus, Ohio. Can be delivered about Jan. 1st.

The Columbus Iron & Steel Co.  
COLUMBUS, OHIO.

## FOR SALE.

### Immediate Delivery.

#### AIR COMPRESSORS.

Two Rand Straight Line, "Class C," 18" x 18" x 24", One Ingersoll-Sergeant, "Class G," Duplex, 20" x 20" x 24".  
One Norwalk (2 stage) 14" x 14" x 9 1/2" x 16".  
Two Rand Duplex (3 stage) 18" x 14" x 8 1/2" x 16" x 22".  
One Rand Duplex Corliss, 20" x 20" x 36".

#### BOILERS.

Four Babcock & Wilcox Water Tube, 208 h. p. each, shaking grates.  
Eight Horizontal Return Tubular, 66" x 16".  
Three Horizontal Return Tubular, 72" x 12".  
Four Horizontal Return Tubular, 72" x 16".  
Three Horizontal Return Tubular, 60" x 16".  
Nine Horizontal Return Tubular, 72" x 18".

#### ENGINE.

One 20" x 40" Buckeye, girder frame, band wheel in half, 12" x 31" face.

#### LOCOMOTIVES.

36" gauge Locomotives.  
Four H. K. Porter 9" x 14", saddle tank.  
Two Vulcan 9" x 14", saddle tank, built 1900.

#### RAILS.

200 tons 30-lb. steel relays.  
200 tons 35-lb. steel relays.  
500 tons 56-lb. steel relays.

#### CARS.

Eighty 80,000-lb. Ore Hopper Cars, made by Allison Mfg. Co.

#### PUMP.

1 Worthington Compound Duplex Condensing Pump, 45" x 17 1/2" x 36", 30" suction and 18" discharge. Capacity, 3,000,000 gallons. All of the above in A-1 order and ready for immediate delivery.  
We buy and sell Air Compressors, Engines, Locomotives, Rails, Cars, Bridges, Boilers, Hoisting Engines and Pumps, etc. Complete plants purchased.

#### BOILER STACK.

1000 feet of 34" Boiler Stack, 5-16" material. This stack is first-class in every respect and will be sold at a bargain.

#### CYLINDER BOILERS.

8 Boilers, 40" long x 34" diam., good for 100 lbs. steam pressure, without fixtures or fittings. For quick sale will be sold cheap.

#### A. V. KAISER & CO.

222 South Third St., PHILADELPHIA, PA.

## FOR SALE.

1 20x36x48 Cross Compound Corliss.....\$3250  
1 18x42 Harris Corliss, overhauled..... 1100  
1 14x48 Corliss..... 600  
1 20x60 Corliss, first-class..... 1000  
1 500 H. P. Berryman Heater..... 150  
1 400 H. P. Knowles Comp. Jet Condenser... 250  
STEAM PUMPS, HEATERS, TRAPS.  
1000' 1" Pipe in three coils, 1/2 net price new.  
4 36" Davidson Vent. Fans.....\$25 each  
1 No. 4 Pedrick & Ayre Compressor, used three months, \$350.  
1 MORSE WILLIAMS ELEVATOR.....\$125  
1 WHITTIER ELEVATOR..... 125  
**F. H. DAVIS & CO.**  
53 State Street, BOSTON, MASS.

## MINE ENGINES.

Made by Dickson, 18" x 18" cylinders, two loose drums on one shaft, link motion 9 ft. gear wheel, powerful construction.

### WICKES BROS.

95 Liberty St., New York City.

## BOILERS!

Engines, Machinery in great variety at LOW PRICES.

Correspondence solicited by  
FIDELITY MACHINE AND METAL COMPANY,  
1406-22 Washington Ave., Phila.

## FOR SALE.

1-54 in. x 12 ft. horizontal tubular boiler.  
1-12x30 horizontal engine.  
1-7 and 14x10 fore and aft marine engine.  
6 steam pumps—all sizes.

E. J. CODD CO., Baltimore, Md.

### Bargains in Second-Hand Direct Connected Units.

One 50 K. W. "Eddy" generator directly connected to 13" x 12" "Ames" horizontal automatic engine. 400 amperes, 125 volts, 250 revolutions.  
One 25 K. W. "Westinghouse" generator directly connected to 10" x 12" "Ball" hor. automatic engine, 125 volts, 240 amperes, 300 revolutions.

#### L. F. SEYFERT'S SONS,

437-441 N. Third Street, PHILADELPHIA.

#### FOR SALE.

Two hundred and fifty tons of new forties; two hundred and fifty tons new thirties; one 16" cyl. Roger Locomotive, good condition; one 15" cyl. Baldwin Locomotive, good condition; one 15-ton stand. gauge Locomotive, for wood or iron rails; two 28 ton 14" cyl. stand. gauge Locomotive, fine condition. Apply

SABEL BROTHERS,  
Jacksonville, Fla.

## FOR SALE.

### We own a choice lot of RELAYING

25 lb. and STEEL RAILS  
30 lb.

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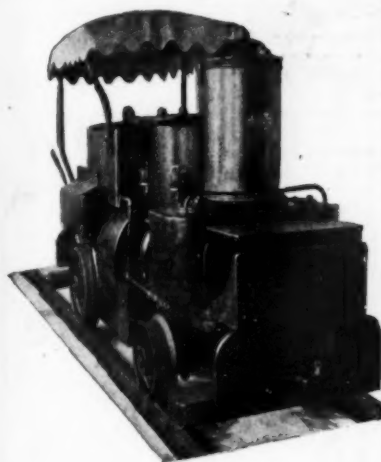
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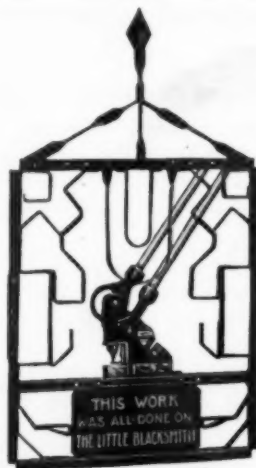
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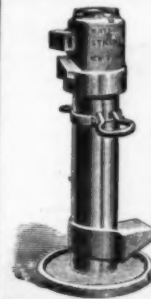
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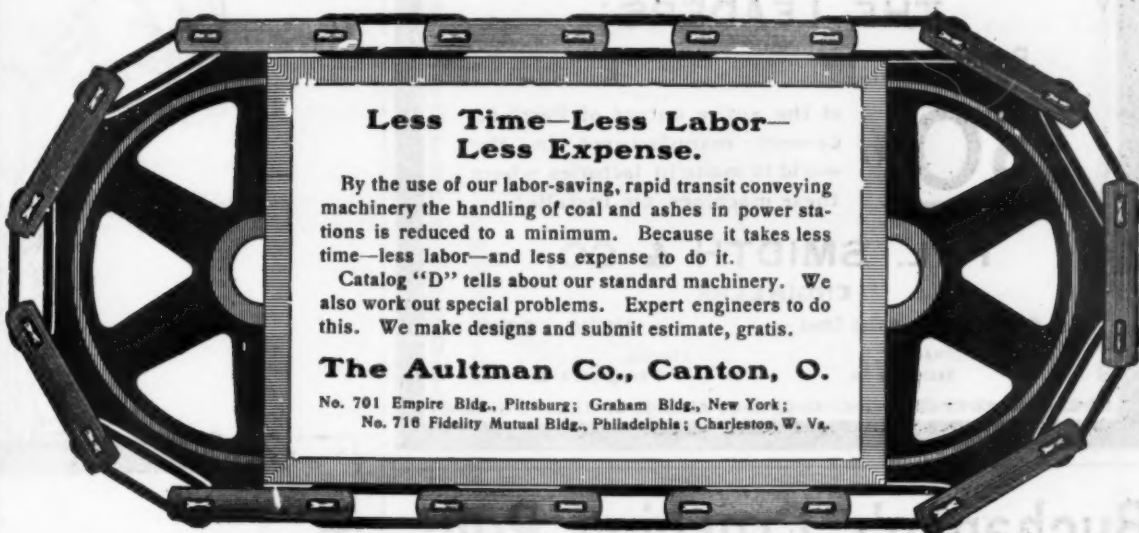
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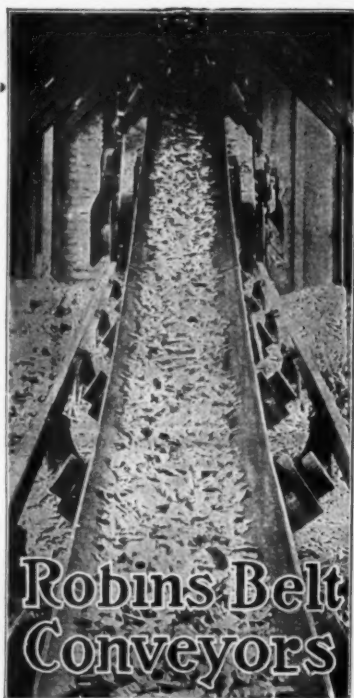
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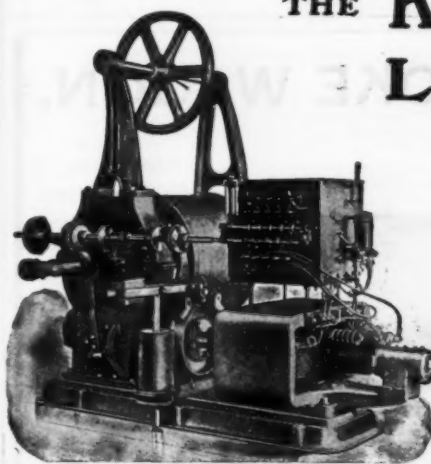
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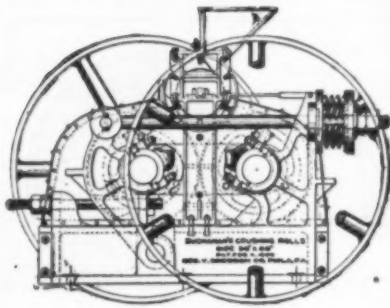
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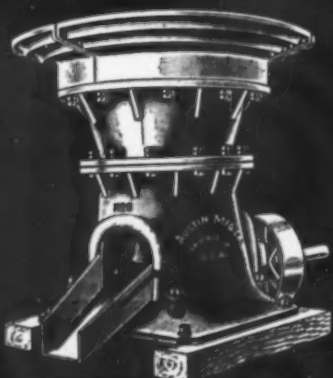


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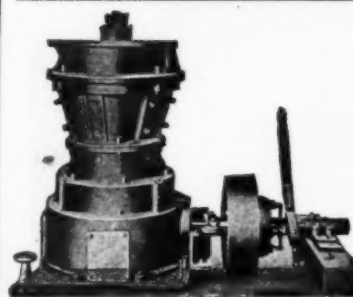
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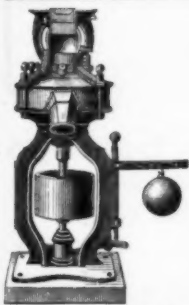
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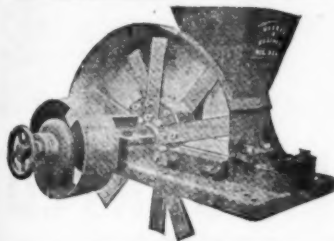
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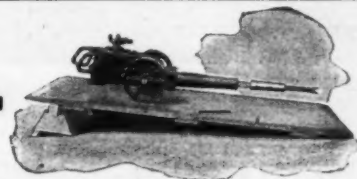
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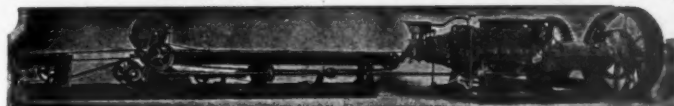
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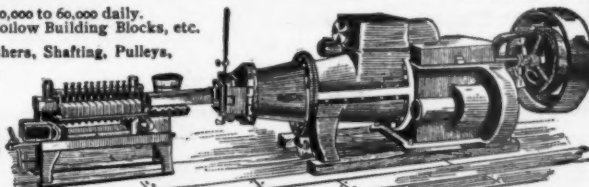
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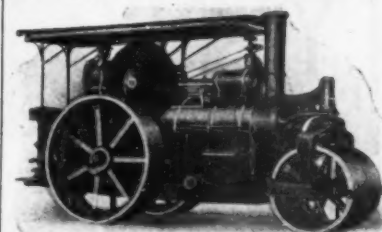
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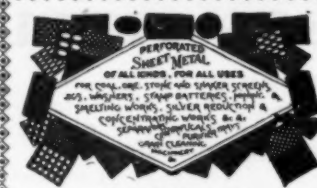
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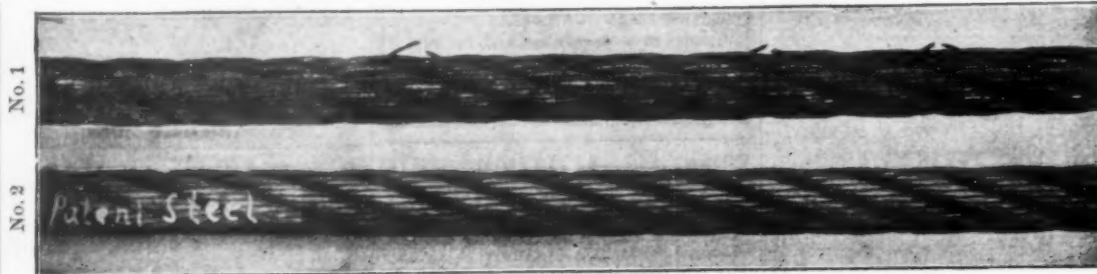
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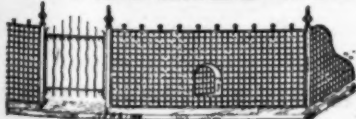
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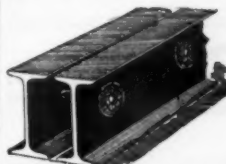
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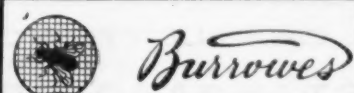
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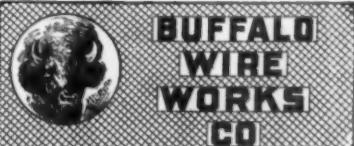
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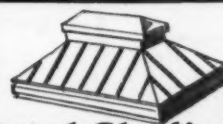
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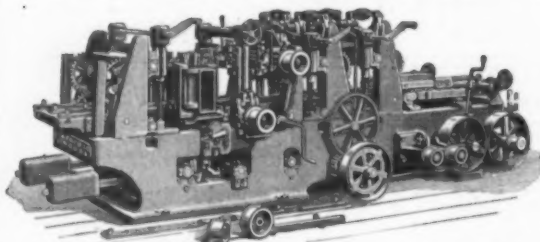
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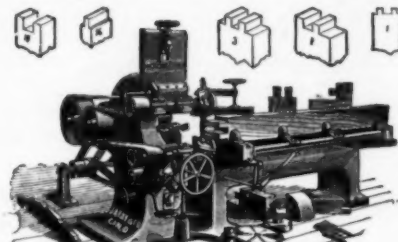
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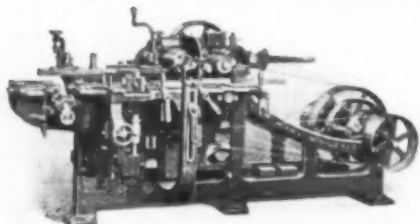
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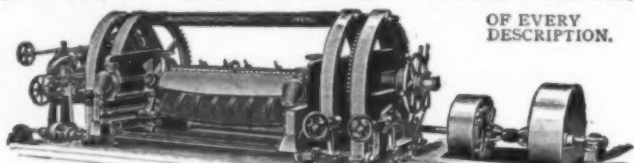
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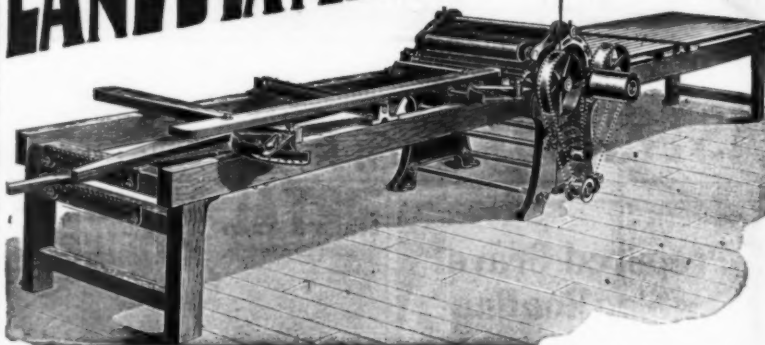
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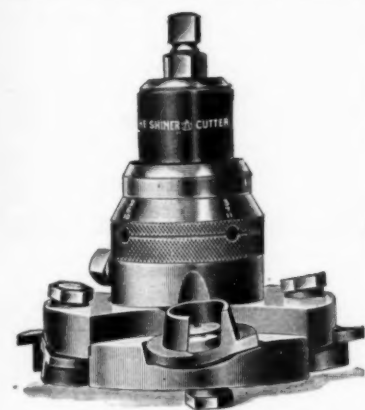
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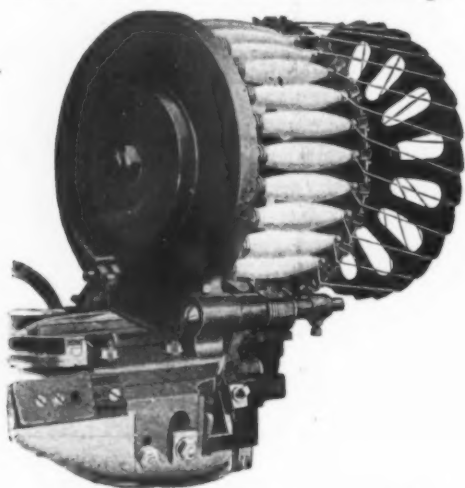
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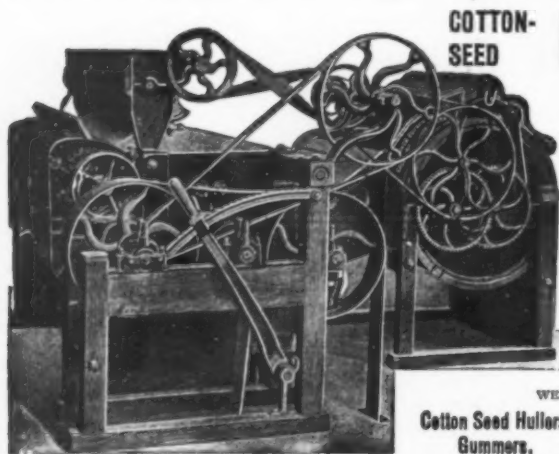
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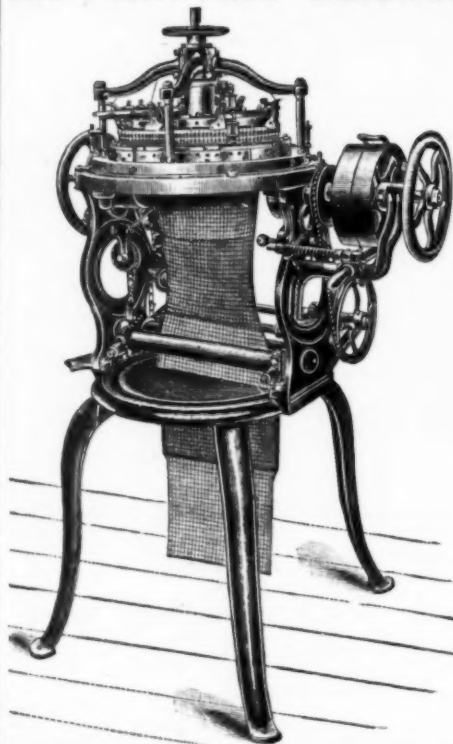
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## All Kinds of Cotton and Woolen Mill Supplies.

Our goods are made of best materials by skillful workmen. From our knowledge we know just what mills need, and are always ready to supply them at proper prices. Send for list of articles manufactured.

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Insurance may be able to build another factory for you but it won't save you for the loss of time. 60% of all fires in large cities are put out with Chemical Extinguishers before the fire gains headway. Be ready "on the spot" for any fire with

### Badger's Fire Extinguisher.

Strong, Simple, Always Ready. Throws a stream 50 feet. A child can use it. Send postal card for full particulars. Used by the United States Government,

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**Badger Fire Extinguisher Co., Dept. A, 32 Portland St. BOSTON, MASS.**

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Our specialties are Seed Cleaners, Rolls, Hullers, Crushing Rolls, Cookers, Formers, Presses and Reboxing other makes of Presses.

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**Brass Goods** FOR ENGINE BUILDERS, STEAM, WATER AND GAS FITTERS  
Write for Catalogue.

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RICHMOND, VA.

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White, Buff, Speckled, Gray, Red and Iron Spot Bricks.  
In All Sizes and Shapes. **FIRE BRICK.**

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**ALUMINUM**  
Electric Conductors, Ingots, Bars, Plates, Castings, Tubes, Sheets, Etc.  
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SPINNING AND TWISTER RINGS.

Whitinsville, Mass.

**NYE & TREDICK CO.**  
**Circular Rib Knitting Machinery**  
For Underwear, Combination Suits, etc., Men's Underwear, Sweaters and Hosiery.  
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OAK HILL, OHIO.

Manufacturers of  
**High - Grade Fire Brick**  
for Blast Furnaces.  
Ask us for delivered prices.

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**HYDRAULIC MACHINERY**

FOR  
**Cotton Seed Oil Mills.**

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**SHERWOOD BOBBIN & MFG. CO.**  
Greensboro, N. C.  
MANUFACTURERS OF

**Speeder, Slubber, Intermediate and Twister Bobbins, Skewers, Spools, Spool Skewers and Clearer Rolls.**

**SAVOGRAN** KEEPS FLOORS AND SURFACES CLEAN  
Highest Awards. INDIA ALKALI WORKS, 28-37 India Wharf, BOSTON. "26 years at it."

THE D. A.  
**TOMPKINS**  
CHARLOTTE, N. C. — COMPANY  
**COTTON MILLS**

### Our Dust Exhaust Systems

are the nearest approach to Perfection yet reached in this class of work.

**THEY MAKE YOU MONEY.**

We Modernize Old Systems.  
Write Today For Prices On

**Fans, Dust Separators and Complete Dust Collecting Systems.**

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324-330 W. THIRD ST. CINCINNATI OHIO.

### CYCLONE DUST COLLECTOR



**DIXIE MANUFACTURING CO**  
BALTIMORE, MD.

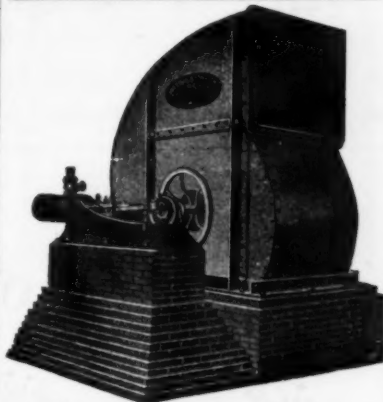
Exhaust Fans,  
Exhaust and Blow Piping,  
Cyclone Dust Collectors,  
Dust Collectors,  
Automatic Furnace Feeders.

Mechanical Experts in  
Removal of

Shavings, Dust, Lint and Odors.

Estimates Furnished and All Work  
Guaranteed.

Correspondence Solicited.



Directed Connected Fan and Engine

## A & J STEEL PLATE FANS

Heating,  
Ventilating,  
Drying, Etc.

**ANDREWS & JOHNSON CO.**  
Chicago, . . . . . Illinois.

How About the Dust From Your Exhaust Fans? Is it Giving You Trouble? If so the

**Hartford Patent Dust Collector**

will obviate the nuisance.

Prices reasonable.

Write for Leaflet No. 55-H

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110 Suffield St.

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## Before You Buy CHAINS.

Trace, Wagon, Coil and Special.

THE INDIANA CHAIN WORKS,  
JEFFERSONVILLE, IND.



CHILLCOTT EVANS CHAIN CO., Allegheny, Pa.

Crane Chains, Log Chains, Tow Chains for River Navigation, Pole and Tongue Chains, Railroad Switch Chains, Wagon Lock Chains, Wagon Stay Chains, Rafting Chains, Railroad Brake Chains, Straight or Twist Link Binding Chain, Close Link, Self-Colored.

## Cotton Oil & Fibre Co.

Southern Office and Works:  
Norfolk, Va.

Land Title Bldg:  
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Producers of

**Crude and Refined Cotton Seed Oil,**  
Cotton Seed Cake, Hulls, Mixed Hulls,  
Linters, Etc.

**Prime Cotton Seed Meal "Cofco" Brand.**

Samples Free On Request. Net 100 Lbs. Fully Decorticated.

Guaranteed Analysis:

Ammonia.....	Not Less Than 8.50 Per Cent.
Nitrogen.....	7
Protein.....	43
Crude Oil and Fat.....	9 to 10

It would pay every town and every property-owner and agent in the South to advertise in the SOUTHERN FARM MAGAZINE. It is published by the Manufacturers' Record Publishing Co., Baltimore.



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Strong, Light, Comfortable.  
Easily Adjusted.  
Liberal Discount to the Trade.  
Catalogue "B" Free.

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McWILLAN BROS.  
Fayetteville,  
N. C.  
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McWILLAN BROS.  
COMPANY,  
Mobile, Ala.  
Mfrs of

**Turpentine Stills,**  
And General Metal Workers.



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Common Proof Coil. Close and Stud Link. Switch, Check and Safety.  
"BB," "BBB" and Dredge. Brake and Special.

**EMPIRE CHAIN COMPANY,**

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Mills and Refineries in Georgia, North and South Carolina, Alabama, Tennessee, Arkansas, Louisiana and Texas.

MANUFACTURERS OF ALL

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Oil Cake and Meal, Hulls,  
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and Soap.

Refiners of

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All Grades.



Manufacturers of

**LARD COMPOUND**

AND

**Wesson Cooking Oil.**

Refineries Located at—Savannah, Augusta and Atlanta, Ga.; Charleston, S. C.; Charlotte, N. C.; Montgomery, Ala.; Houston, Tex.; New Orleans, La.; Memphis, Tenn., and Little Rock, Ark.



**GOLD MEDALS**  
AWARDED.

CHICAGO 1893.  
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MANUFACTURERS AND REFINERS.

**COTTONSEED PRODUCTS.**  
Oil, Cake, Meal, Linters, Ashes, Hulls.

**GOLD MEDALS**  
AWARDED

BUFFALO 1901.  
CHARLESTON 1902.





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DIAMOND POINT SPIKE.

### SPECIALTIES.

Diamond Point Spikes (Patented). Best for soft wood ties.  
Crescent Point Spikes (Patented). Best for hard wood ties.  
Diamond Double Neck and P. R. R. Standard Spikes, with rolled points, for either hard or soft ties.  
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Track Bolts with cut and cold rolled thread.



CRESCENT POINT SPIKE.

### ALSO MANUFACTURERS OF

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Cut Nails of Superior Quality of Iron and Steel.  
Bolts, Refined Bar Iron.

GRANITE CRUSHED TO ORDER FOR CONCRETE PURPOSES.  
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RICHMOND, VA.

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### MINERS AND SHIPPERS

DAVIS LOCOMOTIVE, STEAM AND SMITHING COALS

Sole Agent for Elk Garden **Big Vein Cumberland Coal.**

DAVIS COKE FOR ORE SMELTERS, FOUNDRIES,  
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Shipments to all points accessible to rail or water.

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SMOKELESS, SEMI-BITUMINOUS.

Is the Standard Steam Fuel for the World.

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Manufacturers of the Celebrated Brands of

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## "Clifton" and "Etowah"

Also Miners and Shippers of HIGH-GRADE STEAM  
COAL, and Makers of the Well Known  
"STANDARD" FOUNDRY COKE.

Selling Agents for the North and West: CINCINNATI, CHICAGO, ST. LOUIS,  
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MINERS AND SHIPPERS OF

## Iroquois Splint and Thin Vein Pocahontas Coal

The Two Most Powerful Steam Coals Produced.

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## W. K. NIVER COAL CO.

Miners and Shippers of the Celebrated

**Pen Mar Big Vein Cumberland and Paint COALS.**  
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Unexcelled for Steam and Smithing Purposes,

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MOBILE COAL COMPANY,  
**COAL**

AT WHOLESALE AND RETAIL.

**CARGO & BUNKER COAL**  
furnished promptly.

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### AMERICAN TYPE FOUNDERS CO.

ORIGINATORS OF

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**ELECTROTYPES**

BEST EQUIPPED PLANT IN THE SOUTH

**NICKELTYPES**

FOR HALF TONES. SOMETHING NEW. BIG  
SAVING IN THE PRESSWORK. MAK-  
ING READY MADE EASY

**QUADS**

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For Competent

**TECHNICAL MEN**

For all classes of work.

5,000 positions filled in 10 years.

**Engineering Agency,**

120 Monadnock Block, CHICAGO.

INCORPORATED  
1884

**KENSEE**  
STANDS FOR ALL THAT IS BEST IN BLUE-GEN AND JELICO COALS.  
ADDRESS MAIN JELICO MT. COAL CO. KENSEE, KY.  
(TELEGRAPH JELICO, TENN.)

# CAMERON STEAM PUMPS



WRITE.  
ASK.  
LEARN.

MINES,  
REFINERIES,  
BREWRIES,  
BOILER FEEDING.

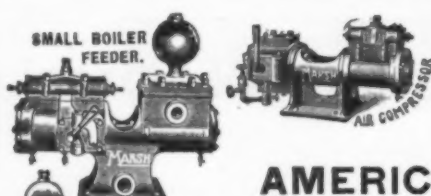
When you get right down  
to the point, you will  
find there are no  
better pumps than  
Cameron Steam  
Pumps.

TANNERIES,  
IRRIGATING,  
FIRE PURPOSES,  
RAILROADS.

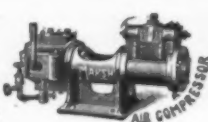
THEY HAVE NO OUTSIDE VALVE GEAR.

**A. S. CAMERON STEAM PUMP WORKS,**

Foot of East 23d Street, NEW YORK.



SMALL BOILER  
FEEDER.



AIR COMPRESSOR

## MARSH STEAM PUMPS

MANUFACTURED BY

**AMERICAN STEAM PUMP COMPANY,**

**SIMPLEX, NOT DUPLEX.**

"To be simple is to be great."

Tobin Bronze Piston Rods.  
Phosphor Bronze Valves.  
Valve Seats, Stuffing Boxes and Removable Water Cylinder Linings.

Write for Catalogue No. 11.

MINIMUM  
OF  
WEIGHT,  
WEAR  
AND  
WASTE.

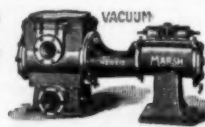


MAXIMUM  
OF  
STRENGTH  
SIMPLICITY  
AND  
SERVICE.

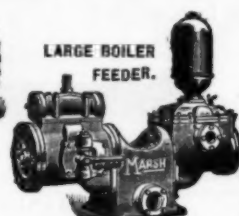
**BATTLE CREEK,  
MICHIGAN, U. S. A.**

Patent Self-Governing Steam Valve.  
Patent Easy-Seating Water Valves  
No Outside Valve Gear.

**50,000 SOLD IN  
THIRTEEN YEARS.**



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LARGE BOILER  
FEEDER.



LARGE TANK

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BOSTON, 81 Milk St.  
PROVIDENCE, 21 Eddy St.  
CHICAGO, 32-34 W. Randolph St.  
ST. LOUIS, 718-724 Charles St.

PITTSBURG, 11 Market St.  
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MEMPHIS, 326 Front St.  
KANSAS CITY, 408-412 W. Fifth St.  
OMAHA, 1014-1018 Douglas St.

DALLAS, 177-179 Elm St.  
SAN FRANCISCO, 31 Main St.  
LOS ANGELES, CAL., 331-333 N. Main St.  
PORTLAND, ORE., 85 First St.  
SEATTLE, WASH., 119 Jackson St.

CLEVELAND, 95-103 St. Clair St.  
DENVER, 1621-1639 17th St.  
DETROIT, 97-101 Woodbridge St., West.  
NORFOLK, 74 Commercial Place.  
PHILADELPHIA, 1744 Market St.

MONTGOMERY, foot of Coosa St.  
SAVANNAH, 126-130 Bay St.  
CINCINNATI, 522 Main St.  
ROCHESTER, 288-275 State St.  
TOLEDO, 1-9 St. Clair St.

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IMPROVED CONDENSING APPARATUS VACUUM PUMPING MACHINERY

Send for Illustrated Catalogue.

**ALBERGER CONDENSER COMPANY, 95 Liberty St., NEW YORK**



**THE  
COOK WELL  
...CO...**

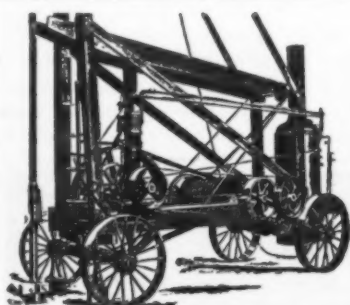
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Cook's System of Wells  
FOR  
Cities, Towns, Villages, Railroads,  
Ice Plants, Breweries and  
Manufacturers.

Cook's Patent Brass Tube  
Well Strainer.

Cook's Deep Well  
Pumping Engines.

Estimates furnished upon ap-  
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and Prices.



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**Portable Drilling Machinery,**

Run by Steam, Gasoline or Horse-power;  
for Water, Oil or Gas Wells, any depth.  
Forty-two different styles. Send for  
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**KELLY & TANEYHILL CO.**

18 Chestnut Street, WATERLOO, IOWA.

## PERRY ANDREWS & BRO.

ARTESIAN  
AND  
OIL WELL CONTRACTORS  
AND  
DRILLERS.

Have had years of experience  
in Oil Well Drilling.

Porter Place,  
ATLANTA, GA.



## Star Drilling Machine Co.

Manufacturers of

**PORTABLE  
DRILLING  
MACHINES**

FOR  
Water,  
Oil or  
Gas  
Wells.



Send for Catalogue "D."

104 FULTON STREET, NEW YORK.

Factory at AKRON, OHIO.

Cable, "Prof."

Tel., 2440 B John

## Well Drilling Machines

Over 70 sizes and styles, for drilling  
either deep or shallow wells in  
any kind of soil or rock. Mounted  
on wheels or on gines or horse  
powers. Strong, simple, durable.  
Any mechanic can operate  
them. Send for catalog.

**WILLIAMS BROS.,  
ITHACA, N. Y.**

GET THE LATEST  
**DEEP WELL  
Pumping Machinery**  
of large and small  
capacities.

**STEAM AND POWER PUMPS**  
The most economical  
Deep Well Pumps on  
the market.

Downie Pump Co., Box 21, Downsville, Pa.



## DENNEY IMPROVED Rider & Ericsson HOT AIR Pumps



Builders of Special  
and Experimental  
Machinery.  
Low Prices.  
First-Class Work.

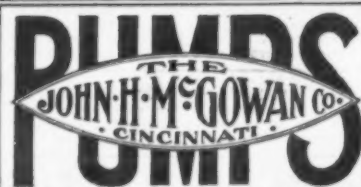
**Reliable, Economical,  
Safe and Noiseless.**

Always ready for service. Can be operated by  
any one. Use any kind of fuel. Built for years by

**AMERICAN MACHINE CO.  
Wilmington, Del.**

Agents—The Tribune Hardware Specialty Co.,  
105 W. Fayette St., Baltimore, Md.  
Send for Catalogue R.

LET US HAVE YOUR SPECIFICATIONS  
OF **SINGLE DUPLEX & ROTATIVE  
STEAM AND POWER**



**SIMPLE COMPOUND & COMPOUND CONDENSING-  
ELEVATOR & WATER WORKS-  
PUMPING ENGINES**

## Water Supply

For Towns, Cities, Mills and  
Industries of every kind.  
Well Systems and Air Lift  
Plants Installed Complete.

**The BACON AIR LIFT CO.**

82 Madison St. NEW YORK.

Sole Owners and Manufacturers of the  
Simple and Compound BACON  
AIR LIFT PUMPS



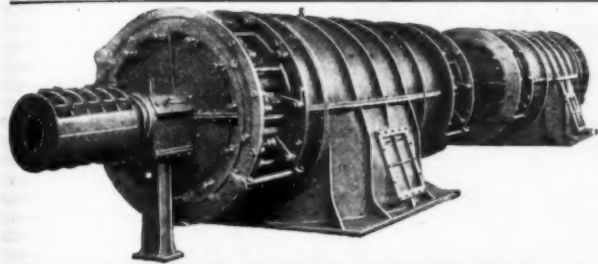
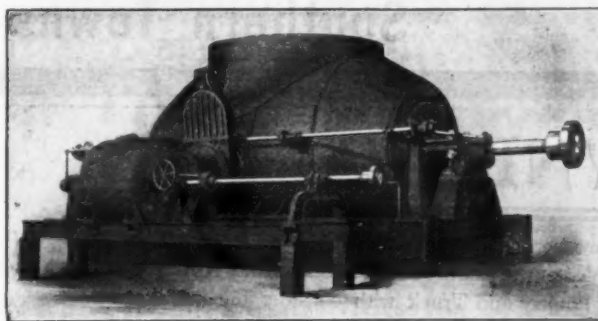
Pair

# McCormick Turbines,

4000 H. P., 72 ft. head, arranged to drive generator and a single turbine to drive exciter. Two settings like cut and 3 each of 5300 H. P., built for the Hudson River Water Power Company for their Spier Falls plant and 14 pairs 51 inch wheels for their plant at Mechanicsville, N. Y.

**S. MORGAN SMITH COMPANY,**
**York, Pa., U. S. A.**

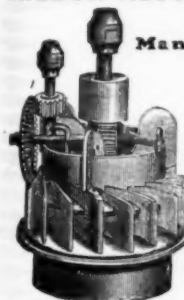
Write for Catalogue if contemplating purchase of Turbines.



## SAMSON TURBINE

In constructing the SAMSON we use only the BEST MATERIAL that can be purchased, furthermore, we employ only skilled labor in their erection. It is necessary to use HIGH GRADE MATERIAL so that all wearing parts will have a LONG LIFE. The SAMSON operates continuously.

WRITE DEPT. "A-2" FOR CATALOG.

**THE JAMES LEFFEL & CO.,**
**Springfield, Ohio, U. S. A.**
**RISDON-ALCOTT TURBINE CO., Mount Holly, N. J., U. S. A.**


Manufacture

## Turbines

to meet all conditions, either on a vertical or a horizontal shaft. Possessing high speed, great wearing qualities and easy to control. Adapted for any water power.

**Risdon Cylinder and Register Gate Turbines.**

Tests in Holyoke Flume: Full Gate  $\frac{3}{4}$   $\frac{1}{2}$   $\frac{1}{4}$  Average

4494 .5472 .5011 .7001 .5195

**Alcott's High-Duty Turbine.**

High Efficiency, Easy Working Gate. Simple, Durable.

**Taylor Sleeve-Gate Turbine.**

Largest Power ever obtained from a wheel of the same dimensions. Are manufactured solely by us. If interested let us tell you more about them.

## A RELIABLE WATER SUPPLY



for any and all purposes can be had if you use a **NIAGARA HYDRAULIC RAM**. Will work anywhere if there be springs, streams or running water, and will deliver from 500 to 200,000 gallons per day. In use by Pennsylvania Railroad Company and many other satisfied purchasers.

Our finely illustrated catalogue, free upon request, will fully explain the merits of our Ram, and will also show what a few of our customers think of it. Good agents wanted.

**Niagara Hydraulic Engine Co., Box 78, Chester, Pa.**

**TAYLOR SPIRAL RIVETED PIPE.**

FOR Water Lines, Irrigation Centrifugal Pumps and Exhaust Steam Systems, **SPIRAL RIVETED PIPE** is especially adapted. Allow us to send catalogue and quote prices.

**AMERICAN SPIRAL PIPE WORKS,**

Main Office and Works, CHICAGO  
New York Office, 26 Cortlandt St

**Glamorgan Pipe & Foundry Company,**

Works, Radford, Va.—Lynchburg, Va.

Office, LYNCHBURG, VA.

Manufacturers of

**Cast Iron Water and Gas Pipe, Special Castings, Flange Pipe and Flanged Specials.**
**Gate and Compression Hydrants, Water, Gas and Steam Valves. General Founders and Machinists.**

Sizes  
1½ in. to 30 in.  
diameter inclusive.


**R. D. WOOD & CO.**

400 Chestnut Street, • PHILADELPHIA, PA.

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ALL SIZES. BELT DRIVEN AND DIRECT CONNECTED.

For Irrigation, Tanneries, Mine Drainage, Phosphate Mining. Circulating Water for Condensers, &c., &c.

Culpeper, Va., June 3, 1899.

**Berry Hill Mineral Springs Co.,  
CULPEPER, VA.**

Dear Sirs: Referring to your recent conversation in regard to my knowledge of the reputation of the Mineral Water of the spring formerly known as "Thom's Spring," Berry Hill, I would say that I have always known of its excellent medicinal advantages and it has been most favorably recommended by all physicians of this section, particularly for Dyspepsia and Rheumatism. This water has been used by a number of my acquaintances and my family with very satisfactory results, especially with my mother-in-law, Mrs. Admiral Earl English, it being prescribed by our family physician, Dr. Alfred S. Rixey. Wishing you much success, as I feel assured your Spring fully merits the same.

S. RUSSELL SMITH,  
President of Culpeper National Bank.

**F. A. HANCOCK, Agt.,**

Lombard St. and Fremont Ave.,

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**UNITED STATES CAST IRON PIPE & FOUNDRY COMPANY,**

Railroad and Township Culverts, Flange Pipe and Special Castings of every description.

MANUFACTURERS OF

**CAST IRON PIPE.**
**All Sizes, 3 to 72-in. Internal Diameter.**

Gen. Offices: Chicago, Ill. Eastern Offices: Phila. Southern Offices: Chattanooga, Tenn.

**CAST IRON PIPE**
**The Dimmick Pipe Co.**
**Makers of VALVES and HYDRANTS. Special Castings of Every Description, Birmingham, Ala.**

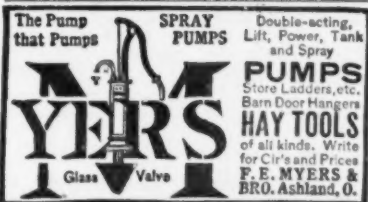
New York, 29 Broadway. Philadelphia, 1051 Drexel Bldg.  
San Francisco, 31 New Montgomery St. St. Louis, 20 Equitable Bldg.  
Pittsburg, 513 Fitzsimons Bldg.


**The PULSOMETER STEAM PUMP**

works just as well hung from a beam or derrick as on a firm foundation. Handles gritty, muddy water.

**Pulsometer Steam Pump Co.**

125 Greenwich St., NEW YORK.

**ERIE PUMP & ENGINE CO.  
ERIE, PA., U. S. A.**
**VERTICAL ENGINES,**
**CENTRIFUGAL PUMPS.**  
Horizontal, Vertical, Direct Connected. Write for prices. Prompt Delivery.

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**Only 14 Miles From Jennings Oil Field.**

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**Wants Especially a Small COTTON-OIL MILL.**

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We own 67 acres of fine level land, two miles from Lynchburg, on the banks of the James and on C. & O. R. R. We also own an unlimited amount of power—hydraulic and electric. Hydraulic, our great dam, now completed, will supply 4000 H. P.; our electric plant, now under construction, will give large additional power.

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Provisions of Article 230 of the Constitution of the State of Louisiana.

"There shall also be exempt from parochial and municipal taxation for a period of ten years from the first day of January, 1900, the capital, machinery and other property employed in mining operations and in the manufacture of textile fabrics, yarns, rope, cordage, leather, shoes, harness, saddlery, hats, clothing, flour, machinery, articles of tin, copper and sheet iron, agricultural implements, and furniture and other articles of wood, marble or stone; soap, stationery, ink and paper, boat building and fertilizers and chemicals; provided, that not less than five hands are employed in any one factory."

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SUBJECT Southern White Cedar poles.

Central New York Telephone and Telegraph Co.

OF UTICA, N. Y.

Utica, N. Y. November 22, 1902.

Standard Pole & Tie Co.,

44 Broad Street,

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Dear Sir:

In reply to your favor of November 19th in regard to Southern White Cedar (Juniper).

We have used a number of this class of poles this year and as far as country and straightness are concerned they cannot be beaten.

They are the best poles to be used in utility work and will give as long a life as any other.

They discount all others that have been on the market to my knowledge up to the present date, and I am sure that in the future they will be the only class of poles that can be used for exchange work.

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I wish also to express my appreciation of your method and dispatch in the handling of our order.

Our inspection shows that all poles received have come up to, and in many cases were above the required specifications.

Yours truly,

Geo. Willwood  
Superintendent Construction.

S. P. & T. CO.

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INDEXED 3 1903

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## Railroads Inviting Factories.

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Price \$3,000.00

This is a small knitting mill, located in one of the best towns in the Carolinas. Death of Manager and consequent disagreements among stockholders has thrown it on the market for one tenth its actual value. The plant consists of

20 Excelsior 160 needle machines,  
1 Loper, 14 point,  
1 Ribber, double feed,  
2 Singer Sewing Machines,  
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shafting, belting, tables, stamping outfit, etc., all installed in nice building, with engine, boiler and dye room attached, ten acres of ground and three tenant houses. A splendid opportunity for an experienced man with small capital to start in business for himself. One of the stockholders will take half interest. For further information address,

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## OPPORTUNITIES

for the location of industries are plentiful in the sections of country traversed by the various lines of the St. Louis & San Francisco Railroad, and the resources are so diversified as to offer excellent chances for many kinds of industries.

### Cotton Mills

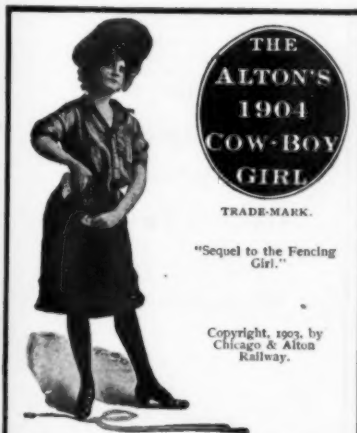
are especially needed throughout the Southwest, as the very finest quality of long staple cotton is raised, labor conditions are of the best and fuel in most sections is cheap. Excellent inducements, such as free sites, bonuses, subscriptions to stock, etc., will also be given by a number of cities and towns along the



to secure cotton mills, knitting mills and all kinds of textile industries.

Send for copy of publication entitled "Opportunities," giving detailed information about the towns and cities traversed by the Frisco System, as well as openings for all classes of industries.

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is the best helper that can be given your workmen.

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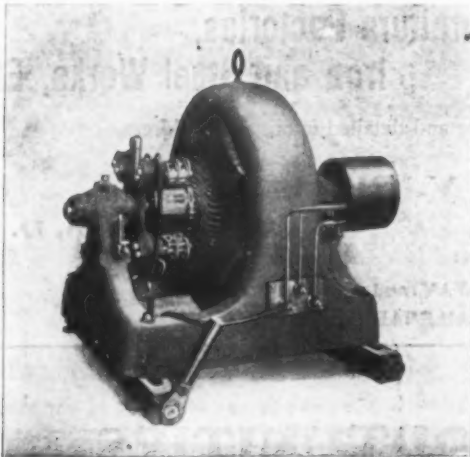
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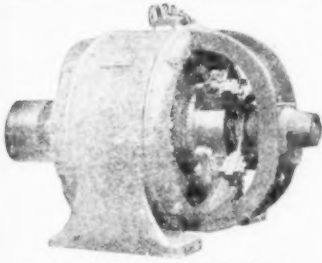
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Enclosed Type Motor without doors

### Triumph Enclosed Type Motors

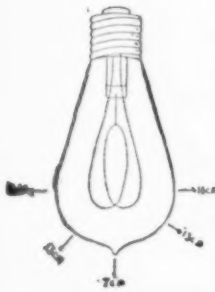
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Our machines are more fully described in our new Bulletin "MR 201." Ask for a copy.

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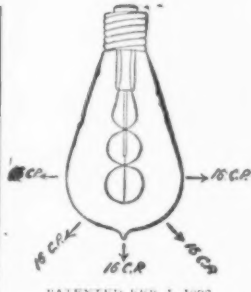


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Side.....16 Candle Power  
Angle.....13 " "  
Tip.....7 " "  
AVERAGE...12 " "

TO USE

### "Sterling Special" Lamps



THE STERLING SPECIAL

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5 Regular Type 16 C. P. Lamps consume 320 Watts.

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Series	5 Lamps	10 Lamps	15 Lamps	20 Lamps	25 Lamps
Regular Type	320 Watts	640 Watts	960 Watts	1280 Watts	1600 Watts
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Saving	80 "	160 "	240 "	320 "	400 "

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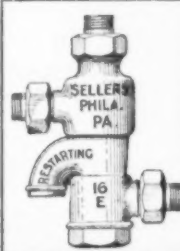
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PER 10-7 1903

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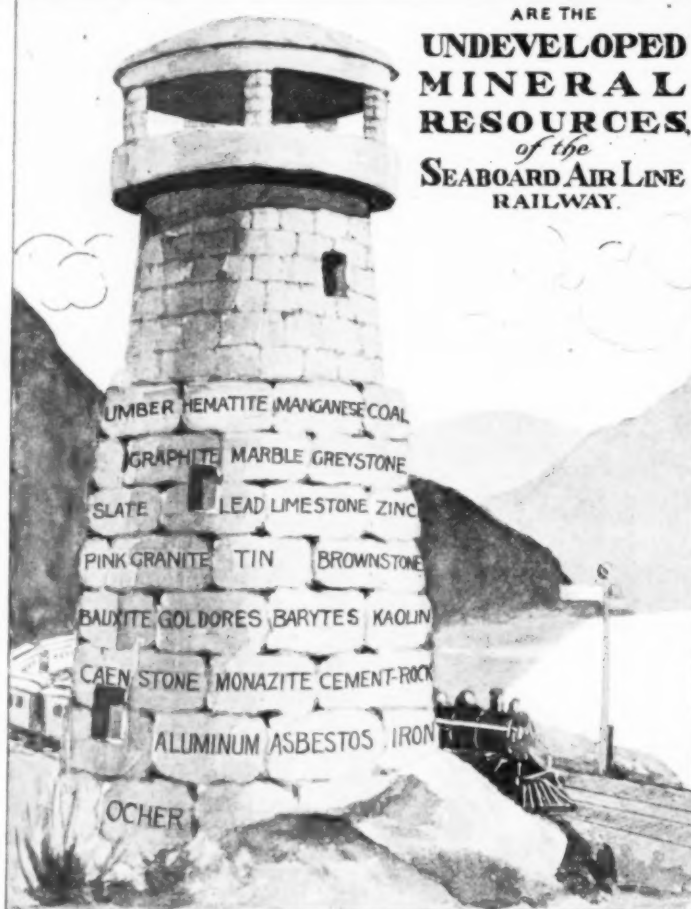
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# MANUFACTURERS' RECORD

## Levee Convention Number

BALTIMORE, NOVEMBER 26, 1903

### MANUFACTURERS' RECORD

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BALTIMORE, NOVEMBER 26, 1903

This issue of the Manufacturers' Record consists of two parts. Part I is the regular weekly issue, and Part II contains the full official report of the Interstate Mississippi River Improvement and Levee Association, held at New Orleans, October 27-28, 1903.

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#### A WORK FOR THE NATION BY THE NATION.

Liberal, adequate aid by the government in the improvement of the Mississippi river and its tributaries was distinctly elevated into a living national issue by the convention of the Trans-Mississippi River Improvement and Levee Association, held at New Orleans October 27-28, 1903. Never in all the years since the justice of national assistance in this gigantic enterprise was first proclaimed has so great a step forward been taken; never has so emphatic and unqualified an expression in its favor been given by so numerous and representative a body of men, and never have such means for assuring the certainty of success been adopted. The whole country is now to be enlisted in behalf of this movement, and when Congress is asked, as it will be soon, to extend this rightful aid, so convincing a presentation of the case will have been made that no doubt can remain of favorable action by the nation's representatives.

Twenty-eight hundred delegates were appointed to this convention, a large number of whom were in attendance. One hundred and sixty-six cities and twenty-four States were represented, and besides senators, congressmen and governors, there were delegates from commercial bodies, organizations and municipalities, covering the great Mississippi valley basin from its eastern confines to its western borders. Veterans in river-improvement and levee work, members of river commissions and senators and congressmen, who, as committeemen, have devoted many years to careful investigation and study of the subjects, were present to give the convention the benefit of their stores of knowledge. Financiers of national renown attended and indorsed the movement. A Cabinet officer was one of the speakers for the cause, and all the influence of the government's head was pledged in support through a personal letter of indorsement from the President himself.

In addition to these commitments, significant and invaluable as they are, favorable letters and telegrams were received from senators and congressmen, sufficient in number, it is computed, when added to known champions of this national movement, to insure legislation by Congress entirely favorable to the cause.

There was dignity and majesty and might in every movement of the meeting. The whole question of the occasion and the right of the government to take a leading part in the great work of river improvement and levee construction was exhaustively and convincingly presented, and the proceedings of the convention constitute a treatment of the whole tremendous question which, prepared in pamphlet form, will remain a text-book of enduring interest and permanent value. Unlike many conventions, the importance of this gathering did not cease with its adjournment. The benefits to come will be unceasing, and, like a council of war, the generals here convened separated but to act on the conclusions that were reached. The campaign of education will go on in congressional halls and wherever influential bodies of men and individuals may be found, until the whole country knows and concedes the justice and the advantage of large governmental appropriations for the work in hand, and members of Congress will perceive that in taking the action desired they are but following an overwhelming preponderance of public opinion.

By an arrangement with the Executive Committee of the Association, the Manufacturers' Record prints the convention proceedings in full, this constituting the only complete and authorized publication—the only publication, in fact, outside of the newspaper reports which appeared from day to day in the local press. This publication has been subscribed to by numerous organizations and individuals throughout the country, and it will be circulated wherever sentiment favorable to government action is sought to be aroused. Herein are presented the speeches delivered and the letters and telegrams received. Herein are concentrated all the conclusions of the most eminent specialists and statesmen, who have, with large vision and expansive grasp, viewed the whole question of the improvement and control of the Mississippi and its tributaries and brought their seasoned wisdom to a solution of the problems it presents. Herein is the subject treated in all the broad nationalism which a thorough comprehension of its magnitude involves, and herein are convincing arguments arrayed to demonstrate that not the farmers and the villagers of the Mississippi valley alone, not New Orleans or any other city, are to be the sole beneficiaries from the work in hand, but every interest in the whole million and a-quarter square miles of the area the Mississippi drains, every incident to the civilization of this almost half of the nation's domain, is affected by the better navigation and surer protection from disaster which are contemplated by the improvement and levee work proposed. And in the prosperity and well-being of this vast section, capable of a development such as the world has never seen, no part or parcel of the nation itself can fail to have an interest, vital and personal, whether voluntary or not.

In the speeches and resolutions are to be found a complete survey of the entire question of improvement for navigation and protection from overflow. And it is noteworthy and significant that the navigation of the Ohio and other tributaries of the Mississippi received explicit and unqualified indorsement as a part of the whole plan of government aid requested. What is proposed is, in effect, a union of all interests and a combination of efforts, so that by one comprehensive and pervasively intelligent plan the navigable waterways of the Mississippi river watershed may be brought to a permanent condition of the highest efficiency, while at the same time the lowlands, fertile almost beyond compare, shall be effectively and continuously protected from the overflows which occur when the Mississippi is swollen from waters of its tributary streams.

Expert testimony was presented to determine the value of the levee system

for the lower Mississippi as against reservoir or outlet plans, which were pronounced unfeasible, here at least. There is no proof, it was declared, that levees result in a gradual elevation of the head of the river, while careful soundings indicate a more permanent channel and a benefit, therefore, to navigation. It was accordingly resolved that there should be completed continuous system of levees from Cairo to the Passes. A liberal estimate of the cost of this work was put down at \$20,000,000, and it was urged that instead of \$1,000,000 or so a year, as at present, the government should appropriate \$2,000,000 or \$3,000,000 a year, so that the work may be brought to completion in the smallest possible term of years.

The right and the duty of the government to undertake this work were held to be as clearly defined as its right and duty to reclaim the arid lands of the West or to set up defenses along the coast or to control the navigation of the rivers. Instead of leaving to riparian land-owners the great burden of the expense of building and maintaining levees, as at present, it was furthermore held to be obligatory on the general government to bear the larger part of the cost of protection from overflows by water which largely originates in other States.

On the direct benefits which will result to the lower Mississippi valley, and indirectly to the country at large, from complete protection from overflow, many of the speakers dwelt with eloquent and alluring prophecy. It is estimated that complete levee protection will make possible the reclamation of at least 20,000,000 acres of bottom lands, now given over to swamps. Leaving out of consideration the value of the gum and cypress and other growths with which they are covered, these rich lands, when drained and cleared, would grow from a bale to a bale and a-half of cotton to the acre, worth from \$50 to \$75, as well as produce other crops—rice in some cases, cane in others and corn and forage of much value. Instead of being worth \$5 an acre, more or less, they would become worth \$30, \$50, \$100 or more, adding fabulous sums to the wealth of the country and supporting a population of added thousands on thousands of prosperous people. There can be no great increase in cotton production in this country until more lands suitable for cotton are opened up. Consumption of cotton is overtaking production, and prophecies are frequently made that the time must soon come when American spinners will require all we raise. Unless the cotton acreage is rapidly and materially increased there must be a constantly recurring famine in cotton and an ultimate permanent high price for the manufactured goods. And it is at present not demonstrated that any considerable addition to the world's cotton supply is to be relied on from attempts to establish the industry in Africa and elsewhere. However, in any case, the Mississippi river bottom lands, when reclaimed and protected from overflow, would constitute the richest agricultural section in the world. They would be taken up and tilled by enterprising and active planters and farmers from everywhere.

Statistics were presented to show how enormously the reclamation of these lands would add to the wealth of the section in all ways and to the advantage of the nation. Sidelights were thrown on the subject by telegrams from George J. Gould and others. Mr. Gould wired his sympathy with the objects of the convention and referred to the fact that his companies are extending and building lines between St. Louis and New Orleans and between New Orleans and the West, most of the \$40,000,000 or \$50,000,000 required being spent in the Mississippi valley, on the expectation and belief that the railroad property will be protected from floods and inundations. B. F. Yoakum of the Frisco road also wired his sympathy, and referred to the \$50,000,000 his company is expending on its St.

Louis-New Orleans line and terminals, a considerable portion of which road would be affected by overflows. The construction of these lines became a possibility only through the efforts that have been made to confine the waters of the Mississippi. Towns and sections hitherto without railroads will thus be provided with the transportation facilities necessary for their development, and New Orleans and St. Louis, as well as the towns and cities between and beyond, will become beneficiaries direct and to a vast degree. The destruction of property, the interference with travel and the derangement of mail communications by overflows and floods is declared so great and general a public inconvenience and loss as furthermore to call for national recognition.

A feature of the resolutions adopted, which has aroused vast interest in the East and received an enthusiastic reception in the North, was the unqualified approval given to the movement for the construction of a waterway to connect the Lakes with the Mississippi and the Gulf—a crystallization of sentiment voiced so long ago as 1845, as evidenced in resolutions recently published by the Manufacturers' Record, which were passed at a river-improvement convention held in Memphis in that year. And also in those resolutions of near sixty years ago is the argument now advanced—that as a military necessity the government should improve and preserve the navigation of the Mississippi.

Of the advantage New Orleans will gain from having carried out the work as called for in the resolutions passed at the convention just held there was public and private discussion at length during the convention and frequently since. That it will benefit to a large degree is a conclusion reached at once. That this benefit will be other than an advantage to the whole South and the country at large as well is a proposition strenuously denied. With the cultivation and development of vast sections of contiguous lands now idle a larger local trade would follow as a matter of course, but in the benefits the manufacturers of the country generally would have a share. An examination of the brands of machinery, clothing, household goods and wares of any family in the country anywhere would reveal how impossible it is for a waste-place to be occupied and built up without advantage to widely-distributed industries. Made safe from inundations, the valley lands would be occupied by many thousands of settlers, who would become revenue-producers for the railroads. With improved navigation from the Lakes and far up the Ohio, the whole Mississippi valley would become, to an increased extent, tributary territory to the cities along those waterways. New Orleans will be the great gateway from the Mississippi valley drainage basin to the countries south and even to the east and west of America—immeasurably greater on the completion of the isthmian canal. New Orleans is even now getting back to her position of supremacy as the trading port for all this valley territory, a position assigned her by nature, occupied without question before 1861 and only temporarily relinquished when artificial outlets of necessity diverted eastward the traffic of her territory, following the shock of war and the destruction of her facilities for trade in the desolation and devastation that ensued. The largest city of the South, in the richest agricultural State in the Union, the trading port of the most fertile valley in the world, it is small wonder that New Orleans is now outranked by but one other American city as an exporter of grain, is growing constantly in every way and is looked upon as certain to become one of the greatest trading marts of the world. And when shippers find it more profitable to trade through this port, they are gainers in wealth, and the whole country is a partaker in the benefits derived.

ALBERT PHENIX.

## President Roosevelt's Encouragement

WHITE HOUSE.

WASHINGTON.

September 28, 1903.

My dear Mr. Parker:

Permit me through you to express my very great interest in the work of the Interstate Levee Convention. Exactly as I have taken a keen interest in irrigation in the arid regions, so I feel that the movement for thoroughly protecting the Mississippi lowlands by levees is one of importance to the whole country, no less than to the people immediately adjoining the great river. I wish all success to your convention, and shall follow its proceedings with close attention.

Sincerely yours,

*Theodore Roosevelt*

Mr. John M. Parker,  
816 Union Street,  
New Orleans, Louisiana.



# CONVENTION OF THE INTERSTATE MISSISSIPPI RIVER IMPROVEMENT AND LEVEE ASSOCIATION.

Held at New Orleans, La., on October 27 and 28, 1903.

## OFFICIAL REPORT.

### FIRST DAY'S PROCEEDINGS.

The convention was called to order at 12 noon by President Charles Scott, Capt. J. W. Bryant acting as secretary. After the opening prayer by the Rev. Beverly B. Warner, and after a photograph had been taken of the assembly, the Chair invited to the platform all governors, ex-governors and members of Congress who were present. President Scott then delivered his address to the convention. [For President Scott's address see page 7.]

At the conclusion of President Scott's address the convention adjourned until 3.15 P. M.

The convention reassembled at 3.15 o'clock in the afternoon, with President Scott in the chair, Secretary Bryant at the desk, and a full membership present.

**PRESIDENT SCOTT:** Gentlemen of the convention, if an Englishman in the heart of London, just where the great English people have erected their statue to the immortal victor of Trafalgar, should arise and attempt to introduce to the assembled populace Edward VII, his work would be no more unnecessary and supererogatory than would be mine if I attempted to introduce to you the next speaker, your gallant governor, the Hon. W. W. Heard. [Great applause.] [For the address of Governor Heard see page 10.]

**PRESIDENT SCOTT:** Gentlemen of the convention, I regret to announce that the distinguished mayor of this city is unavoidably detained. Mr. Secretary, will you kindly read the letter from Mayor Capdevielle.

Secretary Bryant then read a letter from Mayor Capdevielle, as follows:

City Hall, New Orleans, October 27, 1903.

Mr. J. N. Luce,

Chairman Levee Convention, City:

My Dear Mr. Luce:

I deeply regret my inability, on account of pressure of business, to attend this afternoon's session of your convention.

I regret it all the more, as I went to the Convention Hall this morning for the purpose of telling your members verbally that which I now beg leave to transmit in writing.

I am particularly pleased to see the manner in which the delegates have responded to the call, and the interest manifested by them in the cause convinces me that their efforts will be crowned with success.

You can, it is not necessary for me to say, depend upon our hearty co-operation. I would have been pleased to extend personally to the members of the convention, as I now do, a warm and most cordial welcome. Yours very sincerely,

PAUL CAPDEVIELLE,

Mayor.

**PRESIDENT SCOTT:** Gentlemen of the convention, it seems that this august assemblage, with its handsome personnel, has made a distinct impression on the photographers. Mr. J. E. Edmonds, representing the Times-Democrat, states that you have grown in beauty more and more as time goes by, and he requests the honor, in the name of his great paper, of taking your photograph. If, without rising, the members of the convention will be kind enough to turn their faces, or their chairs in the opposite direction, the photographer will press the button and do the rest. [Laughter and applause.]

Thereupon a flashlight photograph was again taken of the convention.

**PRESIDENT SCOTT:** The next thing in order is the election of a temporary chairman.

**HON. THEODORE S. WILKINSON of Louisiana:** Mr. Chairman and gentlemen, it is my privilege to present to this convention the name of a gentleman who has ever been a true friend of our great cause. I present the name of a gentleman who, a quarter of a century ago, had won distinguished honor and esteem in public life, and who, through all the years that came afterwards, never forgetting his duty to his people, his State and his country, made a name famous in the industrial and commercial world, so that, wherever that name is known, it is a synonym of honor and probity everywhere.

But, Mr. President, I don't speak of him now as a leader in industrial and commercial life. I speak of him as a member and a friend of this association, and of the people of our valley for nearly three-quarters of a score of years. I speak of his associations with all our past efforts for the people of the valley. He has been a friend of the farmer, whose products he has sought to bring nuxvexed to the sea. He

has been a friend of the merchant, whose wares have been brought closer to buyers on various shores. He has been a friend to the factory owner and the factory worker, whose products he has helped to send, at a cheaper rate, not only to England and to France, but as far as distant Siberia itself. Mr. Chairman, as a representative of those who live behind the earthen bulwarks that guard us against the mighty floods that dash against our doors, and sometimes through those doors; as a dweller among all the thousands who live behind these slender ramparts, as one who has suffered from the ravages of this great river, and as one who for many long recurring years has ever fought with all the fire of his manhood against this great danger on our front, I present the name of a gentleman who has been, and ever will be, until death claims him as its own, a friend of all the people, of all the Mississippi valley, ex-Lieutenant-Governor Stanard of Missouri. [Great applause.]

**MR. FRANK GALENNIE of St. Louis:** Mr. President, I trust that this convention will indulge me for a moment in the pardonable pride that I feel because our fellow-delegate from the city of St. Louis has been mentioned for the temporary chairmanship of this body. Governor Stanard has stood, from the time of the jetties, when he was in Congress, in favor of the alleviation of the people of this great Mississippi valley. We of St. Louis are not only bound to you by the ties of consanguinity, but by commercial ties, and by everything that affects the welfare of the people of this great valley of the great Father of Waters. We are not only here today with you, but we are for you to the end. [Applause.] We come from our Western homes down here with our hearts filled with sympathy, because we can hardly understand why these great flood heads are turned on you unless we help provide a remedy for you. [Applause.] We come, too, with the boast that St. Louis has always been represented in every river and harbor convention that has ever been held in this valley. [Applause.] We have never asked for anything locally unless we believed that it would benefit the river from the falls of St. Anthony to the Gulf of Mexico.

Governor Stanard will carry weight in your deliberations, and in Congress he will carry votes from our Northwest country. It was only the other day that I was in Davenport, at a river convention, when I was chosen to make one of the delegation to come down here and express the sympathy of those people with this convention in the great subject which you are undertaking to deal with. All that northwestern valley, from Cairo to St. Paul, from the mouth of the Missouri to its headwaters, has ninety votes in Congress, and, my friends, that's what counts, after all. [Applause.] My people sent me to come here with words of sympathy, and in your selection of our fellow-townsmen, whom we respect, and who is one of the best citizens we have in St. Louis, public-spirited, honest, tried and found worthy, we hope that you will confirm the nomination made by the gentleman from Louisiana. [Applause.]

**COL. W. T. DOWDELL of Illinois:** Mr. President, as delegate-at-large from Illinois, appointed by Governor Yates of that State, and as delegate from Memphis, appointed by Mayor Williams of that city, I am here as a delegate from two States, and yet I am not twins. As Congress has enacted a law against polygamy, I guess I will have to select between the two, and not that I love Memphis less, but Illinois more, I will ask to be introduced as the gentleman from Illinois. Gentlemen of the convention, as delegate from a sister State I arise to second the nomination of Governor Stanard of St. Louis. We in Illinois claim him as our own. It was as schoolmaster in a rural portion of Madison county, Illinois, Governor Stanard entered upon the battle of life. A year later he accepted the position of bookkeeper for the commission house of Samuel Spruance in Alton, displaying the energy and industry that have characterized his life. He kept the books and found time to spend three days a week on the road, soliciting patronage for the firm. In a few years Mr. Spruance died and his business house was closed. Young Stanard, in order to reap the benefit of his acquaintance on the road, opened a commission house in St. Louis, reaping a rich harvest. In a few years he returned to Alton and purchased the flouring mills of S. & P. Wise. Soon after his mills were destroyed by fire. Characteristic of the man, he rebuilt at once on a much larger scale, and for the past thirty years has been turning out 1800 barrels of flour daily, amassing for himself a large fortune. While his home has been in St. Louis, his principal business interests are and have been in Alton; therefore Illinois claims him as her own.

Gentlemen of the convention, I congratulate you upon starting the work of this

convention along liberal lines. Governor Stanard is a man of broad and liberal views. The selection of such men to formulate your work is a long step in the right direction and towards achieving success. Your Committee on Resolutions should be composed of the same kind of men, who will formulate a platform of principles broad enough for all and good enough for the most skeptical to stand upon, declaring for the improvement of the Mississippi river and its tributaries, for the purpose of improving their channels for navigable purposes, the leveeing of their banks for the reclamation of swamp and lowlands from overflow. Of course, the work will commence at the jetties, and proceeding north, when Cairo has been reached and the work successfully accomplished, that far making the levee absolutely safe against the raging floods of the mighty Mississippi. Then the Ohio, the most important commercial artery of "the Father of Waters," should be improved to its source; the Red river, the White river, the Arkansas river, the Tennessee, the Cumberland, and so on to the raging waters of the old Missouri, and on up to St. Paul, Minn., not forgetting the Illinois river, one of the smallest in size, but greatest in power of them all. That river washes the eastern border of Peoria, a city that paid into the federal treasury the last fiscal year ending June 30, 1903, the sum of \$32,413,033.13, which is more than five times as much as the amount paid by the entire New England States during that period of time and almost one-eighth of the amount collected last year from the entire United States. All the New England States combined paid last fiscal year \$6,023,650.77, and the entire amount of internal revenue collected and paid into the United States treasury last fiscal year ending June 30, 1903, was \$230,740,382.57, while the city of Peoria, as said before, paid nearly one-eighth of the whole sum. Since the internal revenue law went into effect, July 1, 1862, Peoria has paid into the federal treasury up to the 30th of last June \$506,354,708.27, and at least \$10,000,000 since the 30th of last June. I give these figures as given to me by Captain Rennick, collector of internal revenue of the Peoria (Ill.) district, and vouch for their correctness.

Gentlemen of the convention, I say that those who furnish the grease to make the wagon go have a right to the transportation of their freight by the best possible means. We have the right on our side. We pay the money into the federal treasury, and backed, as we are, by the votes of a majority of the American people, in the language of Old Hickory, "By the eternal" we have a right and will ride in the bandwagon of internal improvements.

Gentlemen, "No pent-up Utica contracts your powers, but the whole boundless continent is yours." The Mississippi valley, commencing at the Alleghanies in the east, extending to the Rockies in the west, from Canada on the north to the Gulf of Mexico in the south, contains a territory for richness of soil and productiveness in agricultural pursuits surpassed by none and equaled only by the imagination of those possessing the most vivid imaginary powers. There is nothing under the shining sun of heaven that succeeds with congressmen, senators and Presidents like votes. We have the votes. Impart that information to Congress, through the press, and you will find it at your feet, ready, willing and anxious to do your bidding. Demand this as your right and your efforts will be crowned with success. [Applause.]

Governor Stanard was then elected temporary chairman of the convention by a rising vote.

**PRESIDENT SCOTT:** The great State of Missouri, as you have always heard, has ever been a steadfast and stalwart friend of Mississippi river improvements, and has ever stood ready to lend a helping hand in the reclamation of the alluvial lands. Among all the sturdy figures there, among all the unique men who have stood out in bold prominence, ever ready to help in this noble fight, is the distinguished gentleman whom I now have the honor of presenting to this convention as its temporary chairman. [Applause.]

Ex-Governor Stanard, upon taking the chair, addressed the convention as follows:

*Mr. Chairman and Gentlemen:*

I hardly know what I will be expected to say after the remarks which have been made. I will, however, say thank you.

I am very much obliged for the honor you have conferred upon me by designating me to preside temporarily over the deliberations of this convention. I have been very much interested in the things I have seen and the things I have heard since I have been in New Orleans today. This is the largest river-improvement convention which I have ever attended. However, I haven't attended many assemblages of this kind for quite a number of years. For some reason we haven't had as many up in the Northern States as we used to have ten or fifteen years ago. It seems to me, though, that the people who are here from the country north of Cairo ought to take new inspiration on the subject of river improvement after we have observed the grand example given to us by the people of the city of New Orleans, the State of Louisiana and the other States adjoining here, who are so specially interested in the matters which this convention was designated to consider. [Applause.]

We are here to consider the question of the improvement of the levees, and, I may say, of the waterways between Cairo and the jetties at the mouth of the Mississippi river. But there is something more necessary to be done in the region of country which I have described, and which most of you represent, than the construction of levees. It is necessary to have permanent improvement the year round and year after year, and some years it is necessary that dredging improvements should be made between the mouth of the Ohio river and the city of Memphis. I believe there is nothing to interfere with the navigation from Memphis down to the jetties at any season of the year, and not nearly as much to be done in the shape of dredging between Memphis and the mouth of the Ohio river as there is in the region of country north of the mouth of the Ohio. It seems to me, therefore, that we should get and will have new inspiration, because not a great deal has been done north of the Ohio.

Now, at the Congress before last, almost two years ago, there was made an appropriation of \$2,000,000 a year, for four years to come, for the improvement of the levees below Cairo to the mouth of the Mississippi river. That, of course, is a considerable sum in itself, and when we consider the remarks of your president, Mr. Scott, who addressed us this morning, that during the great flood within the past year only some three or four places in your levees were interrupted or overflowed, we must really come to the conclusion that you have been doing a wonderful sight of work toward the improvements which are necessary, and that the people of the Northern section ought to emulate your example [applause], get to work and improve the waters of their portion of the country. To do this we want your assistance. If it is given, and if the rivers are made absolutely navigable the year round north of Cairo, the exporta-

tion of the products of this country to foreign shores will always be by way of New Orleans and the mouth of the Mississippi river. [Applause.]

We want your influence, and you shall have ours. [Applause.] Notwithstanding these \$2,000,000 which you get per year, I can well comprehend that it is necessary to make these improvements of the levees permanent and substantial, even though it cost \$20,000,000 or \$30,000,000. [Applause.]

I am sure, from some things that have happened in the past few weeks, that the people in the northern portion of the Mississippi valley are taking a deep interest in the improvement of the western rivers. They have held two conventions, one at Evansville, recommending the improvement of the Ohio river, and one last week at Davenport, recommending the substantial improvement of the Mississippi from Cairo to its headwaters. At the last convention resolutions were adopted asking Congress to appropriate \$15,000,000 for the improvement of these northern rivers, and this begins to show that we are taking a deep interest in the work.

There is another element to be considered, and that is, that almost half of the States represented here today are north of the city of Cairo or the mouth of the Ohio river. [Applause.]

Gentlemen, we propose to emulate your example and do what we can for the promotion of the interests of the lower Mississippi, and we want your help in the work on behalf of the northern waters of that great stream. [Applause.] You know, and we all know, that if the congressmen from all of the twenty-one States that are represented here will unite in this grand work, such appropriations as are necessary for the improvement of the banks in the lower valley and for the dredging and improving the navigation of the rivers above Cairo can be had at any session of Congress. [Applause.] But it takes united and continuous and unceasing energy and work along these lines. [Applause.]

One of the reasons why the northern country that I have described is so largely represented and is taking so great an interest in the improvement of the Mississippi river and its tributaries is on account of the lack of transportation facilities in our section. Our industries seem to have grown much more rapidly than our transportation facilities have done. It is almost impossible sometimes for merchants to get their goods into their stores and warehouses or for manufacturers to send their products out to the world because of the lack of transportation facilities generally. Therefore we want the Mississippi river opened from the headwaters to the Gulf [applause], and then a large share of goods and products that we send abroad will find their way down that great river past the city of New Orleans into the Gulf of Mexico, to be distributed to the world. [Great applause.]

Gentlemen, we have heard a great deal of talk about the Isthmian canal, involving an expenditure of perhaps \$200,000,000. How are the products of the northern and central country, and the cotton, the sugar, the rice and all the fruits of this fertile soil to be exported to the people of the world? Some day, not in my time, but during the life and activity of many of the younger men of this convention, that canal will be observed as of the greatest importance [applause], and then there will be need for increased transportation facilities in this section to distribute the products of the United States to the people of the world. It is well, indeed, for us to look a little ahead.

Now, gentlemen of New Orleans, we want you to have whatever you ought to have in order to make your levees complete and in order to save your crops of cotton, of sugar and of rice from overflow. [Applause.] We want to help you. But don't forget us up in the center of the country. [Laughter and applause.]

The State of Illinois is the fourth in point of population in the United States, and the State of Missouri is the fifth, and there are no two States that are increasing in wealth and population and in general industrial activities, I believe, more rapidly than those two States. [Applause.] We must not forget the State of Kansas, with her 100,000,000 bushels of wheat and her 200,000,000 bushels of corn this year, and other farm products in the same proportion. We must not forget Nebraska, coming sixth in point of agricultural production. We must not forget Oklahoma [applause], producing 40,000,000 bushels of wheat this year and other products in proportion. These are matters that we have got to take into consideration. There is no part of this country, no part of the world, that is increasing in wealth, in population and in industrial activities more than the country in the center of the United States, say, in the valley of the Mississippi. All that country is tributary to New Orleans. [Great applause.] Excuse me for talking so long. [Applause, and a voice: "Go ahead."]

**MR. MURRAY F. SMITH of Mississippi:** Mr. Chairman, I nominate for temporary secretaries of this convention two gentlemen who have been identified with Mississippi river interests for many years—Capt. J. W. Bryant, secretary of the Waterways Commission, and W. A. Everman, secretary of the Interstate Levee Association. [Applause.]

The motion being put, was unanimously carried, and the Chair then recognized Mr. J. L. Vance of Ohio, who addressed the convention. [For the speech of Mr. Vance see page 11.]

**MR. JOHN M. PARKER:** I move for the appointment of a Committee on Permanent Organization, to consist of one member from each State, to meet as soon as possible in the ante-room and to report to this convention their suggestions, so that we can get to the practical work as soon as possible.

**MR. HASTINGS of Cairo:** I move that the delegates from each of the States represented name two members on the Committee on Permanent Organization.

**MR. PARKER:** I move that it be entirely left to the discretion of the Chair.

**THE CHAIR:** Oh, no; I won't do that. Mr. Parker moves that one member from each State be appointed on this Committee on Permanent Organization. The gentleman on my left moves that two members from each State be appointed. Do you still insist upon your motion, Mr. Parker?

**MR. PARKER:** I do.

**THE CHAIR:** Then the motion made by Mr. Hastings will have to be in the nature of an amendment if he insists upon two members.

**MR. HASTINGS:** I offer it as an amendment.

The motion of Mr. Hastings, being put to the convention on a viva voce vote, the Chair declared himself unable to decide. A rising vote was then taken upon the amendment offered by Mr. Hastings, and which was declared lost by the Chair. The question recurring upon the original motion of Mr. Parker, the same was put to the convention and carried unanimously.



The Chair then announced the following as the Committee on Permanent Organization:

JOHN M. PARKER, Chairman.  
 HON. ISAAC M. MASON.....Missouri.  
 HON. L. M. MAGILL.....Illinois.  
 HON. LEROY PERCY.....Mississippi.  
 COL. J. L. VANCE.....Ohio.  
 C. L. ROBINSON.....Kentucky.  
 GEO. H. ANDERSON.....Pennsylvania.  
 E. W. SHIRK.....Indiana.  
 SAM. PHILLIPS.....Tennessee.  
 J. HY. LAFAYE.....Louisiana.  
 GREENFIELD QUARLES.....Arkansas.  
 R. W. LEVY.....New York.  
 JOHN A. McILHENNY.....Louisiana.

COL. J. L. VANCE of Ohio: I ask that my name be withdrawn, and that Judge John S. Connor of Cincinnati be substituted.

There being no objection, the substitution suggested by Colonel Vance was made.

COLONEL VANCE: Is a motion in order in relation to the Committee on Resolutions?

THE CHAIR: I understand that Mr. John M. Parker has an important letter to read from the President of the United States. I am sure that the convention would like to hear it.

SECRETARY BRYANT: Mr. Parker has gone out with the committee.

At this stage, upon motion of Gen. T. C. Catchings of Mississippi, the convention took a recess for five minutes, the delegates remaining in their chairs.

#### After Recess.

SECRETARY BRYANT: I am requested to notify all those who hold round-trip tickets of the Western Passenger Association and the Central Passenger Association that they will have to be signed by me as secretary of the convention. I will be at the service of anybody on tomorrow morning from ten minutes past eight up to the time of the assembling of the convention, and those that don't have their tickets signed at that time can have it done in the afternoon. I will be here at the hall for that purpose.

THE CHAIR: I have the pleasure to say that Mr. Wilson, Secretary of Agriculture, will address this convention this evening at 8 o'clock. I now take pleasure in introducing Mr. John M. Parker of New Orleans. [Applause.]

MR. PARKER: Gentlemen, before reading the report of the Committee on Permanent Organization, it gives me great pleasure to read a letter to you from the President of the United States. [Applause.]

White House, Washington, D. C., September 28, 1903.

My Dear Mr. Parker:

Permit me, through you, to express my very great interest in the work of the Interstate Levee Convention. Exactly as I have taken a keen interest in irrigation in the arid regions, so I feel that the movement for thoroughly protecting the Mississippi lowlands by levees is one of importance to the whole country, no less than to the people immediately adjoining the great river. I wish all success to your convention, and shall follow its proceedings with close attention.

Sincerely yours,

THEODORE ROOSEVELT.

MR. PARKER: The clearest and most unequivocal document in favor of national control that has ever been issued in this or any other country. [Applause.]

MR. MURRAY F. SMITH of Mississippi: Mr. Chairman, I want to offer the following resolutions:

*Resolved*, That the thanks of the people of the Mississippi valley are hereby tendered to President Roosevelt, through this convention, for his manly and patriotic letter endorsing the purposes for which this convention has been called, to wit, the deepening and improving of the channel of the Mississippi river and the protection of the vast area of alluvial and fertile territory along its banks from devastation by floods, thereby conserving and facilitating the vast and growing interstate commerce already transacted through the medium of great railroad systems behind the levees.

*Resolved further*, That the chairman and secretary of this convention be requested to wire these resolutions to the President.

The resolutions offered by Mr. Smith were put to a vote and adopted unanimously.

Mr. Parker then read the report of the Committee on Permanent Organization, as follows:

New Orleans, La., October 27, 1903.

Hon. E. O. Stanard,

Temporary Chairman Interstate Mississippi Levee Convention:

Sir—The Committee on Permanent Organization beg leave to report as follows:

They recommend that Hon. Charles Scott of Rosedale, Miss., be elected the permanent chairman of this convention.

That John W. Bryant of Louisiana and William A. Everman of Mississippi be elected permanent secretaries.

They further recommend that there be a Committee on Resolutions, to consist of two delegates from each State represented in the convention, and ten (10) delegates at large, to whom all resolutions shall be referred for consideration without previous debate, and that the members of this committee shall be appointed by the permanent chairman.

Having now fulfilled all the duties incumbent upon them, your committee request their discharge.

Respectfully submitted,

JOHN M. PARKER, Chairman.

The report of the Committee on Permanent Organization was received and adopted unanimously, and Mr. Charles Scott thereupon assumed the Chair.

MR. SCOTT: Permit me to return my profound thanks for this distinguished honor. What is the pleasure of the convention?

MR. KING of New Iberia, La.: Is this the time for resolutions?

MR. W. H. STOVALL of Mississippi: I would suggest that a Committee on Resolutions be appointed before any resolutions are received; otherwise, you have no committee to which to refer them.

THE CHAIR: There is, properly speaking, nothing before the convention.

MR. DOWDELL: I move that the Chairman appoint a Committee on Resolutions. Which motion, being put, was unanimously carried.

THE CHAIR: The Chairman will announce the committee when we meet here this evening at 8 o'clock; you have been wearied with quite a long attendance. It is suggested that the convention take a recess until 8 o'clock, and if there is no objection, that will be done.

(Recess until 8 o'clock P. M.)

Night Session, October 27.

The convention was called to order at 8 o'clock P. M., with President Scott in

the chair, Secretary Bryant at the desk, and a number of delegates present.

SECRETARY BRYANT: I have been requested to announce that the Cotton Exchange, on the corner of Carondelet and Gravier streets, is open to the visiting delegates and invites a call from them. Their badges will admit them to the floor of the Exchange. The same invitation is extended by the New Orleans Board of Trade, and also by the Young Men's Gymnastic Club, on Rampart, between Canal and Custom-House streets. I also announce that the New Orleans Railways Co. tenders a trolley ride to the delegates for 5 o'clock tomorrow afternoon. The starting-place of the cars will be announced at the morning session tomorrow.

There will also be a river excursion tendered to the delegates and the ladies. The boat will leave the head of Canal street Thursday afternoon at 2 o'clock, and will return to the wharf at 5 o'clock, which will give delegates time for dinner and to leave on the evening train. The excursion will take in the river front, going up as high as Southport, about nine miles above Canal street, which will afford a view of the Stuyvesant wharves, with its elevators, and the Texas & Pacific wharves, with its elevators. The boat will also go down the river to Port Chalmette, the National Cemetery and the naval dock, and thence on down to the sugar plantations, where it will stop so as to give the delegates an opportunity of going into the sugar-house and observing the process of manufacture.

CHAIRMAN SCOTT: Gentlemen of the convention, it is well sometimes that we take a retrospect. The levee cause, the reclamation of the great alluvial basin of the Mississippi river, is now at the high tide of prosperity. I think we can well assume that on the adjournment of this distinguished convention, by following up our efforts in a proper way, we will necessarily secure a larger assistance from the general government than we have ever been able to get in the past, and that ultimately the national government will relieve us in large measure of this onerous burden. This has not always been the case. Going back some years ago, it was impossible to get an appropriation from the national Congress for levees per se. Even those who were most ardently in favor of internal improvements did not dare at that time to advocate such an advanced measure on the floor of the House of Representatives or in the United States Senate. The way has been long and the wind has been cold, and standing out prominently throughout the struggle, I may say, without any discrimination against others, were a band of distinguished valley statesmen who never shirked their duty and whose services to the Mississippi valley should be ever remembered with gratitude. One of these gentlemen comes from my native State, Gen. T. C. Catchings, known far and wide as the levee champion. [Applause.] With him, working shoulder to shoulder, trusted brothers in arms, as it were, were two distinguished Louisianians who always did the full measure of their duty. One of these was Senator Gibson, now passed away; the other is the distinguished gentleman, Hon. N. C. Blanchard, whom I now have the honor of introducing to you. [Great applause.] [For speech of Judge Blanchard see page 12.]

PRESIDENT SCOTT: We have with us tonight, gentlemen of the convention, a very distinguished visitor, a member of the President's official family, who, in answer to our urgent invitation, has kindly consented to address you. I have the honor of introducing Mr. Secretary Wilson of the Department of Agriculture. [For the speech of Secretary Wilson see page 13.]

CHAIRMAN SCOTT: Gentlemen of the convention, my observation teaches me that the great State of Louisiana is always equal to every emergency. She always raises, for instance, big crops of cotton. She can be relied upon to raise big crops of rice. She has been known as the largest producer of sugar-cane in America, and we find that she continues now, as in the past, to raise plentiful crops of great men and accomplished statesmen. [Applause.] And so as you have lost in Congress by death Senator Gibson, a very useful man in connection with your levee work, and as the other great levee champion, Judge Blanchard, has retired to accept judicial honors within the borders of your State, another Richmond has entered the field. Permit me to introduce to you the Prince Rupert of Louisiana politicians, Hon. Joseph E. Ransdell. [For the speech of Congressman Ransdell see page 14.]

CHAIRMAN SCOTT: The Chair will now announce the list of the Committee on Resolutions. It will be composed of the following gentlemen:

#### Members at Large.

T. C. CATCHINGS, Chairman.....Mississippi.  
 JOHN M. PARKER.....Louisiana.  
 W. J. DALY.....Indiana.  
 LEROY PERCY.....Mississippi.  
 J. N. LUCE.....Louisiana.  
 CAPT. W. B. MALLORY.....Tennessee.  
 CAPT. PATRICK HENRY.....Arkansas.  
 COL. GREEN CLAY.....Missouri.  
 C. F. HUFF.....Missouri.  
 GEORGE PARSONS.....Illinois.

#### Members from States.

J. E. WILLIAMS.....Indiana.  
 J. H. ODELL....." "  
 J. F. ELLISON.....Ohio.  
 J. L. VANCE....." "  
 GEO. H. ANDERSON.....Pennsylvania.  
 N. B. KELLY....." "  
 FRANK WENTER.....Illinois.  
 W. E. TROUTMAN....." "  
 DR. J. T. ATTERBURY.....Mississippi.  
 R. F. ABBEY....." "  
 R. W. LEVY.....New York.  
 E. L. CAVANAUGH....." "  
 N. H. SEWALL.....Alabama.  
 W. L. SLATER.....California.  
 E. B. CUSHING.....Texas.  
 L. S. THORNE....." "  
 J. S. B. THOMPSON.....Georgia.

At this point the convention adjourned until tomorrow morning, October 28, 1903, at 10 o'clock.

## SECOND DAY'S PROCEEDINGS.

The convention met pursuant to adjournment at 10 o'clock A. M., President Scott, Secretary Bryant and a large membership being present.

**CHAIRMAN SCOTT:** Gentlemen, there is one man in the Mississippi valley of colossal mind, of brave heart and willing hands, whose name is loved and honored and revered by every man who has fought the great fight and helped to win the great battle of the floods. You will have the pleasure of hearing from him this morning. It is unnecessary for me to add, after what I have said, that the distinguished gentleman is Judge Robert S. Taylor, who will now address you. [Great applause.] [For the speech of Judge Taylor see page 15.]

**CHAIRMAN SCOTT:** Gentlemen of the convention, the alluvial basin of the Mississippi river has always been fortunate enough to have in the United States Senate able and distinguished friends. Among them all there is one who has been to us a tower of strength; one who has ever been found where the battle raged fiercest and longest; one who on a recent memorable occasion snatched victory from the jaws of defeat and saved to the alluvial sections the appropriation for the Mississippi river when even its most sanguine friends thought it had been irretrievably lost; a man of heroic mold, morally, intellectually and physically; one who says in deeds, if not in words—

How can man die better  
Than fighting fearful odds,  
For the ashes of his fathers  
And the temples of his gods? [Applause.]

I present to you, gentlemen, the Chevalier Bayard of the United States Senate—the Hon. James H. Berry, senator from the State of Arkansas. [Applause.] [For the speech of Senator Berry see page 18.]

The convention took a recess until the afternoon.

## After Recess.

**GENERAL CATCHINGS:** I desire to submit a report of the Committee on Resolutions. I desire to say that the committee was in session all morning engaged in the discharge of the duty imposed upon it, and the members were thereby deprived of hearing some very excellent speeches. I will say that all of the States represented here were represented in that committee, and I am sure that the resolutions were satisfactory at least to the members of the committee who were present. Now, with your permission, I will read them. [For resolutions see page 24.]

On motion of General Catchings the resolutions were unanimously carried.

**GENERAL CATCHINGS:** Gentlemen, I am directed by the committee to report this further resolution:

*Resolved,* That it is the sense of this convention that the work of the Interstate Mississippi River Improvement and Levee Association, under the wise and able guidance of its president, Charles Scott, has been of great and lasting value, and its continuance is a matter of vital importance, and that this organization as it exists, with Charles Scott as its president and J. W. Bryant and W. A. Everman as its secretaries, be continued, and that Charles Scott be authorized to appoint three members from each State as members of the Executive Committee of said association.

**GENERAL CATCHINGS:** Gentlemen, in view of the fact that this resolution refers directly to the chairman, I will take the liberty of putting the question.

The resolution was then put to a vote and unanimously adopted.

**PRESIDENT SCOTT:** Gentlemen of the convention, permit me to express my sincere and cordial thanks for this evidence of your confidence and esteem. What is the further pleasure of the convention?

**MR. J. N. LUCE:** I move that the Chair be authorized to appoint a delegation to present these resolutions and a memorial to both houses of Congress; that the Chair take his own time in so doing, making the appointment either before or after the adjournment of the convention, and that he give, as we know he will give, consideration to all recommendations that are made by State delegations or by commercial bodies who are with us in the selection of that delegation. I know of no man who is better fitted to make the selection than our chairman. [Applause.]

The foregoing motion, being duly seconded, was put to the convention and carried unanimously.

**PRESIDENT SCOTT:** I am requested to state that the undisposed business of the convention is so great that the trolley ride will necessarily be postponed until tomorrow. I am also requested to state that the various levee organizations of the valley will have a meeting tonight in the banquet hall of the St. Charles Hotel. Pardon me—Captain Henry tells me that since I was informed of the program the levee organizations have concluded that it is best to meet at 3.30 o'clock in one of the rooms provided here for the purpose.

I also desire to state that, through the efforts of the very able chairman of the local committee, Hon. J. N. Luce, a number of distinguished statesmen throughout the American Union have been heard from through letters and telegrams on this important subject of the protection of the riparian lands. Captain Bryant has just handed me a list, showing that he has responses from twenty-one governors, and that various congressmen throughout the country have also responded, and prior to the adjournment of this convention tomorrow these various letters and telegrams will be presented for your consideration.

Gentlemen, with us today we have one of the great statesmen and financiers of the country; one who has indelibly impressed his personality and talent on the financial history of America; one who for a time was the trusted and honored friend, and not only so, but a member of the official family of one of the greatest of living American statesmen, Grover Cleveland. [Great applause and hurrahs.] I have the honor, gentlemen, to present to you the Hon. Mr. Fairchild of the great State of New York, who will now address you. [Applause.] [For the address of Mr. Fairchild see page 19.]

**CHAIRMAN SCOTT:** Gentlemen of the convention, the South has many great papers and periodicals in which it can well take a lasting pride. Without intending to make any invidious distinctions, I believe you will all agree with me in saying that among this number one stands prominently forth as a beacon light, one that has labored in and out of season for the development of this beloved Southland. That is the Manufacturers' Record of the city of Baltimore, and I have the honor of introducing to you its distinguished editor, Mr. Richard H. Edmonds, who will now address you. [Applause.] [For the address of Mr. Edmonds see page 20.]

**PRESIDENT SCOTT:** Gentlemen of the convention, I observe in this distinguished audience a cultured scholar, whose researches have extended through all the fields of learning; a genial Southern gentleman, who has captured all hearts with which he has come in contact; a powerful and adroit debater, whose keen Damascus blade has never known defeat; a great Southerner, who is the pride of his section, as he is of his country; the next leader of the great democratic party in the lower house of Congress—the peerless Mississippian, John Sharp Williams. [Great applause.] [For the address of Congressman Williams see page 22.]

**PRESIDENT SCOTT:** Pretty much all sections have been heard from before this distinguished audience except the great and growing Northwest. Permit me to introduce to you Mr. George H. Maxwell, a distinguished gentleman from that section, who will now address you on the subject of reservoirs. [Applause.] [For the address of Mr. Maxwell see page 22.]

**PRESIDENT SCOTT:** One word. A great many members of this convention, I am informed, are exceedingly anxious to leave for their homes tonight. We have received a number of letters and telegrams. Is it the pleasure of the convention that they be read now, or would the convention prefer to take an adjournment until tomorrow morning? It is entirely with you, gentlemen, and I await your pleasure.

**MR. PERCY of Mississippi:** I believe it is the pleasure of the convention to hear them now and get through with our business.

**MR. J. L. VANCE of Ohio:** If the secretary should read an epitome of the communications, will it be possible for us to close the session of the convention this evening?

**CHAIRMAN SCOTT:** Yes, sir.

**MR. VANCE:** Then I suggest that that be done.

Which motion being put, the same was unanimously carried.

**SECRETARY BRYANT:** I wish first to state, in regard to the attendance at this convention, that we have had actually present duly accredited delegates from 167 cities and municipalities in twenty-four States, beginning as far east as Massachusetts and going on through the Lake region and as far west as Washington and California.

**PRESIDENT SCOTT:** Gentlemen of the convention, I am requested to state that the members of the various levee boards will meet tonight at 8 o'clock in the banquet hall of the St. Charles Hotel.

Secretary Bryant then read the letters and telegrams from the following gentlemen:

Governors S. W. T. Lanham, Texas; A. B. White, West Virginia; J. M. Hickey, Nebraska; Jeff Davis, Arkansas; W. S. Durbin, Indiana; J. C. W. Beckham, Kentucky; Richard Yates, Illinois; C. M. Herriod, South Dakota; A. T. Bliss, Michigan; J. K. Toole, Montana; S. R. Vansant, Minnesota; A. M. Dockery, Missouri; S. R. Pennypacker, Pennsylvania; Henry McBride, Washington; J. H. Peabody, Colorado; J. M. Terrell, Georgia; J. B. Frazier, Tennessee; A. B. Cummings, Iowa.

Senators James B. McCreary, Kentucky; Wm. J. Stone, Missouri; Porter J. McCumber, North Dakota; A. J. McLaurin, Mississippi; H. D. Money, Mississippi; Wm. P. Frye, Maine; S. B. Elkins, West Virginia; Geo. C. Perkins, California; W. A. Clark, Montana; Chauncey M. Depew, New York; T. C. Platt, New York; W. B. Allison, Iowa; M. S. Quay, Pennsylvania; J. H. Mitchell, Oregon.

Congressmen W. M. Howard, W. G. Brantley, Georgia; C. F. Scott, P. P. Campbell, Kansas; J. W. Borduey, Alfred Lucking, H. L. Haineton, Michigan; Richard Bartholdt, W. D. Vandiver, J. T. Hunt, Missouri; Swayer Sherley, A. O. Stanley, Kentucky; A. F. McLain, E. J. Bowers, Thomas Spight, E. S. Chandler, Mississippi; H. P. Goebel, W. W. Skides, A. H. Jackson, J. W. Cossingham, G. W. Nepp, I. S. Snark, C. H. Grosvenor, Ohio; Gordon Russell, A. W. Grigg, J. L. Slayden, W. R. Smith, Texas; R. F. Broussard, A. P. Pujo, Louisiana; Thomas Hedge, W. J. Wade, B. P. Birdsall, Iowa; W. O. Smith, James W. Brown, S. R. Dresser, J. H. Shull, H. Burt Cassett, A. L. Bates, Edw. Morrell, G. R. Patterson, Pennsylvania; E. F. Henyon, North Carolina; W. L. Jones, Washington; J. N. Williamson, Oregon; J. J. Esee, J. H. Davidson, J. J. Jenkins, J. W. Babcock, Wisconsin; F. W. Mandell, Wyoming; C. R. Davis, R. Steenerson, Minnesota; W. S. Greene, Massachusetts; R. R. Hitt, B. F. Caldwell, W. A. Rodenburg, George W. Smith, Illinois; J. C. T. Robbins, J. S. Little, S. Brundidge, R. B. Mason, Minor Wallace, Arkansas; S. J. Bowie, G. W. Taylor, J. H. Bankhead, William Richardson, Alabama; L. P. Padgett, T. W. Sims, R. A. Pierce, J. A. Moon, Tennessee; Theo. A. Bell, Connecticut; F. E. Brooks, Colorado; A. M. Allen, Maine; Joseph Howell, Utah; Paris Gibson, Montana; N. P. Otis, New York. [For text of these messages see page 26.]

**CHAIRMAN SCOTT:** Permit me to say, gentlemen, that the success of this great levee convention, the greatest in the history of the Mississippi valley, is largely due to the untiring and intelligent efforts of Hon. J. N. Luce, chairman of our local committee, and Mr. John M. Parker of this city. These efforts have been greatly assisted by the press throughout the country, and especially by the New Orleans press, and if I might be permitted to make the suggestion, I think it would be graceful and proper for some member of the convention to move a vote of thanks.

**MR. J. N. LUCE:** I make one suggestion. In addition to Mr. Parker, I had the very able and energetic assistance of Captain Bryant and Mr. Lafaye on our local committee; in fact, I think a vote of thanks should go to the whole committee.

**MR. J. L. VANCE of Ohio:** You anticipated me by a minute or two in those remarks. I know our thanks are due to the gentlemen named by the president. He has, however, omitted himself from that list, and I now move that the thanks of the association be tendered to President Scott, Secretary Bryant, Mr. Luce, Mr. Parker, the chairman of the Executive Committee and the chairmen of the other committees connected with this organization, and particularly to the members of the press, who have so well reported our proceedings.

Which motion being put, was carried unanimously.

A resolution was adopted of thanks to Capt. Patrick Henry for his able and successful service in Washington as representative of the Interstate Mississippi River Improvement and Levee Association.

**A MEMBER:** I now move that we adjourn sine die.

**MR. VANCE:** Before putting that motion I want to move, additionally, that the thanks of the convention be tendered to your Board of Trade, the Cotton Exchange, the street-railway system and the other commercial and industrial bodies of this city, and the citizens generally, for the hospitality with which they have received us.

The motion to adjourn being temporarily withdrawn, the motion of Mr. Vance was carried unanimously. The convention then adjourned sine die.



## PRESIDENT CHARLES SCOTT'S OPENING ADDRESS.

I have ventured, my fellow-citizens, to call together this parliament of distinguished men in the interest of the world's greatest valley. The governor of Louisiana has been prompt to supplement and sanction this call by his official proclamation—a broad and public-spirited act which has been and is now the subject of universal commendation. It was justified, and more than justified, I might say, by the vast and varied interests at stake, because at last it is generally conceded, I believe, that the reclamation and the protection of the alluvial lands of the Mississippi valley from the drainage waters of thirty-two States and Territories is a matter of great national importance.

### National System of Massive Dikes.

How can this be done? By whom and when? These are some of the momentous questions that will demand and receive your careful and dispassionate consideration. Speaking not for myself alone, but for the association over which I have the honor to preside, and voicing, if you please, the unalterable sentiment of millions of American citizens, I do not hesitate to say that this protection can come only from a national system of massive dikes. [Great applause.]

This, I am aware, is a bold and pregnant statement, but it is fully sanctioned by the past history of levee-building throughout the ages. Not only so. Local conditions and local experience sanction and sustain every syllable of it as a potent and faithful verity.

How else, pray, can the fecund fields and the giant forests of this imperial valley be protected from inundation? If we may not depend upon the levee system for protection, upon what can we depend? I am fully aware of the fact that our friends, the "outletters" (if I may be permitted to coin an awkward word or phrase), are always with us. They always have been with us, and I guess they will be to the end.

### A System of Outlets.

They still point with some degree of pride and confidence to a system of outlets as a panacea upon which we can safely rely. Their past exponent and great high priest in the lower valley, Capt. John Cowden, was for many years, I believe, a respected resident of this city. An honest man, a fiery enthusiast, firmly convinced and wholly possessed by his favorite theory, he, like a second Peter the Hermit, preached it far and wide. We cannot marvel, then, if for a time it had some effect on congressional and, I may say, on public sentiment. Why, gentlemen, in 1890, when the great Levee Convention met in the historic city of Vicksburg, this association, you will remember, was organized. We then sent a delegation of some twenty or twenty-five prominent citizens of the valley, from Louisiana and all the other riparian States, on to the national capital. When they arrived there they found that Captain John was almost the master of the situation. He actually had possession of one of the committee-rooms of the United States Senate, and his maps and charts were on the walls and all over the tables. But his theory could not bear the test of close and impartial investigation. It was fallacious. And my observation, gentlemen, has been that, sooner or later, every fraud—I do not intend to use that word in a disagreeable or unpleasant sense—so let us say every fallacy in this world, when properly attacked, must fail and fall to the ground. It was no new theory, this of outlets. Eminent hydrographers had tried it long and merry ago. It is my pleasure to notice in this distinguished assemblage Maj. B. M. Harrod [applause] and other eminent engineers of international reputation. I am sure that they will sustain fully the statement that I have just made about the outlets. They will not only do that, but they could go further and tell you that the system of outlets had not only been tried, but that it had been discarded years ago by distinguished Italian and other hydrological engineers. We read in a treatise by the great Gennitè about a system of outlets in connection with the river Adige. He tells us that they served, as they will always do in silt-bearing streams, to cause a shoaling or raising of the bed of the river, which greatly added, as he says, to the danger of floods. So, too, the great Paolo Frisi did not hesitate to denounce outlets in no uncertain terms. They were also tried, I may say ad nauseam, by Vincent Viviani in the river Celone, only to result in filling up, or partially filling up, the bed of that stream; and the fact is this went to such an extent that the main trunk of that small but useful river was entirely closed.

Going still further back, if you please, we read in one of Pliny's classical letters that outlets were largely experimented with under the orders of the wise and humane Emperor Nerva. Again they proved wanting, and were finally discarded because they utterly failed to prevent the inundation of the adjacent territory.

### Task for a Practical People.

But we Americans are a practical people, and I imagine that some of you are thinking that this is all "ancient history"—that you would rather know something about the present authorities on the subject, and especially the American authorities. What about local conditions, and what about a system of outlets as applied to the regime of the great Father of Waters? Well, it has always been my observation, gentlemen, that like causes may be relied upon to produce like effects—modified or enhanced, of course, by the occasional peculiarities of environment. So it is, my fellow-citizens, if we do not today find a consensus of opinion, we do find an overwhelming preponderance of scientific opinion firmly and unalterably opposed to the theory of outlets. And why? Why should these eminent gentlemen of the Mississippi River Commission, who enjoy now, let me say en passant, as they have always enjoyed, the full confidence of the people of this great valley [applause]—why should they and the able and practical engineers in charge of these vital interests throughout the alluvial section be opposed to outlets? They can surely have no ulterior object; surely they are not wedded to the system of levees per se. What they want, and what you and I want, gentlemen, is perfect and permanent protection from inundation—nothing more and nothing less. We all oppose the system of outlets, then, simply because it does not give and it cannot give the necessary protection. Utterly failing to relieve the congestion of waters, outlets have the opposite effect. They cause, or tend to cause, as was said, I believe, by Major Harrod in a very able paper presented not long ago to the American Society of Engineers, a shoaling or filling up of the bed of the Mississippi river just exactly, gentlemen, as Gennitè tells us they caused a shoaling years ago in the bed of the Adige.

It could not be otherwise. The Mississippi, as you well know, is the largest of all silt-bearing rivers. Its waters are heavily charged with sediment brought down by

all the "arrowy streams," if I may borrow a phrase from a great Mississippian now passed away, the beloved and knightly William A. Percy [applause], as they descend from the mountains on either side. When this sediment finally reaches the main trunk of the river it is greatly supplemented by the silt from the caving and the erosion of the ever-changing and shifting banks of this mighty stream. So long as we confine the river in a single channel you will understand, of course, that its power is conserved and a uniform flow of its waters measurably maintained, except, of course, in isolated cases. Now, under these conditions, gentlemen, this great river can perform its normal functions as intended by Mother Nature. In other words, it can carry its burden of silt, imposed upon it by an all-wise Providence, until finally it is safely deposited in the waters of the Gulf. Let us suppose, however, that any very large derivation or outlet is made, and what will be, ex necessitate, the effect? Don't you see it is tantamount to dividing the river? You will understand, then, that you subtract thereby just as much from its carrying capacity. The old stream grows indignant, perhaps; at any rate, it becomes unable to properly perform the functions that nature intended, and the silt instantly commences to be deposited. The upbuilding of the river bed will follow, and this, if continued from year to year, will in the long run seriously interfere with the navigation of the stream, and may lead to even more serious consequences. It might tend indeed to render the alluvial basins of the lower valley altogether unfit for inhabitation. This grave danger, my fellow-citizens, warns us to let the mighty river flow on, as the great Lincoln said, "unfretted to the sea."

### Origin of the Great Floods.

Another thing. All of you are thoroughly acquainted with the topography of the lower valley and know full well, therefore, that any important system of outlets is impracticable until you pass to the southward of the Red river. Where do the floods come from? They come from the north. The "big waters" are usually caused by the simultaneous outpouring of the Ohio, the upper Mississippi and the Missouri. These waters become congested in the main trunk of the river, and as they pass south of Cairo, the capacity of the channel being overcharged, they commence to spill over on either side into the alluvial basins. It follows, necessarily, that a vast area of alluvial lands would be inundated for days, a great deal of it for many days, before the descending floods ever approach the zone of influence of any system of outlets situate so far to the south.

Now, this whole question, as my friends, Judge Blanchard and General Catchings (both of whom are with us today) will tell you, received the attention of the national Congress some years ago. The committee of commerce of the United States Senate, then composed, as is nearly always the case, of some of the most eminent men in the nation, gave the subject exhaustive and painstaking study. The result of their labors on this and cognate matters will be found embodied in an able report to the Fifty-fifth Congress, and I will ask you to permit me to read briefly what this committee has had to say on this important and interesting subject. I refer to my notes; here is the language of the committee:

Neither can your committee discover from the evidence or through other sources any material relief from the outlet system. It is not practicable to relieve the river by means of outlets, except below the Red river. Two important outlets now exist, and have for years existed on this reach of the river—the Atchafalaya and Bayou Lafourche. A third, Bayou Plaquemine, is now closed, pending its preparation for reopening by means of locks and dams. But these outlets, or others that might be constructed on this reach of the river, could afford no perceptible relief for the river above, where relief is much more called for and needed. The St. Francis, Yazoo, White and Tensas basins can get no relief from any practicable outlet system. And where this system exists and is feasible, there is no disposition to extend it or to substitute it for levee enlargement.

### The Reservoirs.

So much, then, for the outlets. But there is another supposed plan of salvation generously offered to you sinners—I beg your pardon; I should say you dwellers of the valley. I allude, of course, to the reservoir. These, like the outlets, can by no means be included in any correct list of modern innovations. The fact is that they are older than the days of the patriarch Joseph. We read that immense reservoirs were constructed in China, India and elsewhere in the Orient while our European forefathers were still howling barbarians (if I am not too disrespectful to our distant and dear departed ancestors), scantily clad in furs and content to make their habitations in hollow trees or secluded caves. We still find traces of one of these immense structures, the Poolari reservoir, whose walls are said to have extended over thirty miles in length, and whose waters, when bank-full, as some writers tell us, were capable of irrigating or inundating over sixty square miles—something almost incredible.

No such stupendous works are attempted by our modern engineers. The very largest reservoir that has been built, so far as I know, in our day and generation is the great Nile dam at Assouan, constructed, as you will remember, under the auspices of the British government at a cost equal to about \$12,500,000 in American money. But even this is a small affair as compared with the ancient structures I have just mentioned. Still, it is a noble work, in which our English cousins may well take pride. It was finished in 1902, and was dedicated, I believe, in December of that year by the Egyptian Khedive with great pomp and ceremony. It will interest you, perhaps, to briefly notice some of its salient features. However that may be, it is proper, in order to bring out the point that I now desire to present for your consideration, that I should call your attention to its dimensions and capacity.

You will pardon me again if I refer to my notes. I am indebted for these data to a very interesting and instructive article by Penfield that appeared not many months ago in the North American Review. I quote from his article:

In an official report by Earl Comer, the British diplomatic agent in Egypt, it has been stated that the actual cost of the Assouan dam is about \$12,500,000, and that it will increase the earning capacity of Egypt by \$13,000,000 annually. The reservoir will permit the additional irrigation of 1,600,000 acres, and will bring an additional revenue annually to the Egyptian government in taxes of \$1,900,000, and indirectly more.

You will observe a little later on, gentlemen, that what our English friends consider to be a very good investment is a mere bagatelle as compared with the benefits to our nation of the reclamation of this great alluvial basin. [Applause.] I further quote from Mr. Penfield's article:

The dam is straight from end to end, and is one and one-quarter miles long. Its thickness at its deepest part is eighty-two feet, tapering to twenty-three feet at the top, which is finished as a roadway. Its height from the lowest part of the foundation to the coping is 121 feet. The maximum "head" of the impounded water is sixty-five feet, and the dam,

when full, is calculated to contain, according to Sir Benjamin Baker, its chief engineer, 234,300,000,000 gallons of water, weighing practically 1,000,000,000 tons.

Verily, gentlemen, a marvelous and stupendous structure! But if we should attempt to use the great Assouan dam or one like it in any effort to control the turbulent waters of our great inland sea it would prove a mere bauble, a child's plaything, something akin to the mud walls or dams that you and I constructed—shall I say only a few brief years ago?—in the early days of our childhood. How many dams equal to that at Assouan do you think would be required to have any appreciable effect on the floods when there is a great rampage in "the old Mississippi," if you will pardon me for dropping, not as Mr. Wegg did, into poetry, but into the local vernacular? How many dams equal to that stupendous work would be required, I ask, to have an appreciable effect on one of our real "big waters"—a water, let us say, like that of 1897? You will be astounded and perhaps startled when I tell you that it would require not less than forty of them. Here are the figures.

#### A United States Engineer's Report.

These data were kindly prepared at my request by that genial gentleman, talented engineer and superb officer of the United States army, Capt. Charles L. Potter, who for several years was in close touch with important Mississippi river work. I can do no better than read you his letter. I know statistics are rather dry, but you will understand that we are not talking here altogether for "buncombe," if you will pardon the expression. These proceedings will be published and will go out all over the country; so Captain Potter's figures in this connection would perhaps be more decisive on the question of reservoirs than anything I could say if I were to talk for an hour. Here is his letter:

#### RIVER AND HARBOR IMPROVEMENTS ON LAKE SUPERIOR. Portage Lake Ship Canals.

United States Engineer Office, 519 Providence Building.

Duluth, Minn., October 6, 1903.

Mr. Chas. Scott, Rosedale, Miss.

Dear Sir—Answering your letter of the 28th ultimo, I would say that I have no records of the water in 1903, and those of the great flood in 1883 are probably not as reliable as those of 1897, so I have taken the high water of 1897 to work upon. This flood reached 51.6 at Cairo, while that of 1883 reached 52.2, so my figures are somewhat small for the highest flood, that of 1883.

You ask for the data at Cairo. The observations for discharge are taken at Columbus, Ky., about twenty-one miles below Cairo, but as no tributaries enter in this distance, the discharge observations are practically good for Cairo.

It is a point of low-gauge reading, however (the maximum for 1897 being 45.08, while Cairo went to 51.6), so I also give you the data for Helena, Ark., where the gauge went to 51.75, in addition to that for Columbus.

#### AT COLUMBUS, KY.

The discharge for a bank-full stage was 1,303,536 cubic feet per second, or 586,591,200 gallons per minute.

The discharge at extreme high water (estimated from the highest gauge at which observations for discharge were made) was 1,675,173 cubic feet per second, or 753,827,880 gallons per minute.

The difference between bank-full discharge and high-water discharge was 371,637 cubic feet per second, or 167,236,680 gallons per minute.

The discharge corresponding to the last foot on the gauge of the amount necessary to draw off to lower the flood plane one foot at this point was 128,859 cubic feet per second, or 57,966,580 gallons per minute.

With a reservoir holding 234,300,000,000 gallons it would take the excess of the highest discharge over bank-full discharge 1401 minutes, or twenty-three hours twenty-one minutes, or practically one day, to fill this reservoir, i. e., one such reservoir would be required for each day that the gauge was at forty-five feet.

To reduce a flood of this magnitude one foot would require one reservoir of the size mentioned for each 404 minutes (sixty-seven hours twenty minutes, or two days nineteen hours and twenty minutes, say, two and three-quarters days) of the time the river was at this stage.

The hydrographs show at Columbus, Ky., for the high water of 1897:

River above bank-full stage.....	47 days.
River above 42 feet stage.....	44 "
River above 43 feet stage.....	39 "
River above 44 feet stage.....	28 "
River at 45 feet stage.....	7 " (high water.)

To store the water of this flood above a bank-full stage (6,450,000,000,000 gallons) would have required twenty-eight reservoirs of the size mentioned above, or one reservoir fifty-five and one-half miles square (3080 square miles) and ten feet deep.

#### AT HELENA, ARK.

The discharge at a bank-full stage was 1,153,346 cubic feet per second, or 519,330,700 gallons per minute. The discharge at extreme high water (estimated from the highest gauge at which observations for discharge were made) was 1,713,992 cubic feet per second, or 771,294,000 gallons per minute.

The discharge corresponding to the last foot on the gauge or the amount necessary to draw off in order to lower the flood plane one foot at this point was 84,576 cubic feet per second, or 38,059,200 gallons per minute.

The difference between bank-full discharge and high-water discharge was 560,146 cubic feet per second, or 252,065,700 gallons per minute. With a reservoir holding 234,300,000,000 gallons it would take the excess of the highest discharge over bank-full discharge 932 minutes, or fifteen hours and thirty-two minutes, or practically two-thirds of one day, to fill the reservoir, i. e., three such reservoirs would be required for each two days that the gauge was at fifty-one and three-quarters feet. To reduce a flood of this magnitude one foot would require one reservoir of the size mentioned for each 6156 minutes (102 hours and thirty-six minutes, or four and one-quarter days) of the time the river was at this stage.

The hydrographs show at Helena, Ark., for the high water of 1897:

River above full-bank stage.....	56 days.
River above 45 feet.....	46 "
River above 46 feet.....	41 "
River above 47 feet.....	28 "
River above 48 feet.....	25 "
River above 49 feet.....	15 "
River above 50 feet.....	8 "
River at 51½ feet.....	1 "

But for the fact that several crevasses occurred in a short distance from Helena, this gauge would have gone some higher and would have remained near the high point much longer.

To store the water of this flood above a bank-full stage (9,475,600,000,000 gallons) would have required forty reservoirs of the size mentioned above, or one reservoir sixty-seven and one-third miles square (4532 square miles) and ten feet deep.

It will thus be seen that to hold the flood down to bank-full stage at Helena would require reservoirs at some point above with a depth of ten feet and an area of 4532 square miles, or 2,900,490 acres, which, at a value of \$10 per acre (it is not believed that large bodies of delta land could be had anything like as cheap), would cost \$29,000,000 for the land alone.

Holding the river down to a bank-full stage at Helena would still cause an overflow of

a great part of the third district, as the banks are naturally lower, and water entering low places would overflow much of the land back from the river, where it is considerably lower than at the river banks.

Trusting that this will give you the information you desire, I am,

Very respectfully,

CHAS. L. POTTER,  
Captain, Corps of Engineers.

Now, gentlemen, suppose we assume that from an engineering standpoint it is practicable to construct anywhere in the Mississippi valley an immense work forty times as large as the great Nile dam, and suppose we further assume that this could be done at a like cost per cubic yard. You will observe that this would represent the gigantic sum of \$500,000,000. Add to that the cost of the lands where this great structure would be situate, and we have the stupendous figure for a reservoir that would not give us any adequate relief of \$529,000,000.

These figures are prohibitive. It would seem, then, almost useless to discuss the practicability of a work of this kind from other standpoints—the great difficulty of obtaining "holding grounds," as they are sometimes called, for a titanic work of these proportions; the long period of time, year after year, that would be required for its completion; the great danger of impounding a stupendous mass of water weighing 40,000,000,000 tons here in our midst, a deadly and insidious foe, ever ready, night and day, to undermine or to break through or to leap over its barriers in a mad rush to the distant sea. And, above all, consider the grave criminality that would be involved in such an effort. I am sure you will all remember within the past month the giving away of some great reservoirs (the exact locality I don't remember, but it was near the Atlantic seaboard), sweeping many lives out of existence and carrying away millions of dollars invested in public and private property. Think what would be the result if a similar disaster should occur to a vast work forty times as large as the great Nile dam situated at any point that your imagination may suggest in the Mississippi valley, destined before many years to be not only the garden spot of the nation, but its great center of population. The imagination recoils from such a heart-rending picture. No, gentlemen, no! Reservoirs are impossible. They have been so pronounced by the eminent gentlemen of the Mississippi River Commission, I think. I know they have been so pronounced by the committee on commerce of the United States Senate, from whose report I just quoted, as well as by almost every practical engineer of whom I have ever heard. En passant, I will say Mr. Haupt, the consulting engineer, of Philadelphia, who is a very forceful and learned writer, takes issue with me, I understand; but Mr. Haupt has never been in practical touch with the great river, whereas every eminent engineer that I know of who has come in personal contact with the mighty forces of this majestic Southern and Western stream has pronounced the system of reservoirs utterly unfeasible and impossible.

But I see in this distinguished audience some influential gentlemen from the golden grain fields of the great and growing Northwest who may resent this statement. Let me say right here if they need reservoirs to irrigate and fructify their fields or to reclaim their arid lands, that is altogether a different question. In the name of that modern gospel, which should animate and control every progressive American citizen, when it commands him to cause the waste places to blossom like the rose and to make two blades of grass grow where there was only one before, let us stand shoulder to shoulder with them and help them to get national appropriations in the prosecution of their beneficent work. [Applause.]

But when you come to any intelligent scheme for controlling this mighty river reservoirs will not answer the purpose. In other words, if you will pardon a slang expression, I will say in language more forceful than elegant we have no use for reservoirs "in our business." [Applause.]

#### A National System of Levees.

Now, then, seeing that outlets are not only impracticable, but harmful, and that reservoirs are impossible, can you marvel that the dwellers of the valley cry out as with one voice for a national system of levees whose impregnable walls shall extend all the way from Cairo to the head of the passes? This, and this alone, it is my firm and honest conviction, can give perfect and permanent protection to that vast area of fertile lands whose development only awaits the magic touch of Nature's nobleman, the planter and farmer—he who Emerson tells us, as the creator, the producer, the maker of things, stands always "nearest to God." But the planter and the farmer, gentlemen, can do nothing until you give him protection, and the more you look into the subject the more firmly convinced you will become that the levees are the new way and the old way and the only way of protecting any extended valley from inundation. [Applause.]

Here, again, we have been anticipated by those of the olden times, for we read that levees were in use 2000 years, and perhaps more, before the coming of the Christ. Did it ever occur to you (it does sometimes to me), in spite of what I may call the intellectual arrogance of the twentieth century, that, after all, "there is nothing new under the sun?" The shifting sands which have buried the glories of Babylon and Nineveh for centuries past hide from us, I doubt not, mighty engineering and other secrets we fain would know. Still other sands, it may be, held within their silent embrace ages before these proud cities reared their heads a higher civilization than has ever been revealed to them or to us. However this may be, history tells us in no uncertain tone that the great and wise Queen Semiramis, while dazzling and fascinating the Assyrian courtiers with her majestic beauty and the radiant luster of her wondrous eyes, still found time to protect with a perfect system of dikes the homes and fields of her loyal subjects from the rebellious waters of the Tigris and the Euphrates, forever chafing within their shores. Many others have followed (as we all like to follow a charming lady) her laudable example. As the sciences and arts extended their benign influences from the Orient westward over the continent of Europe we find that levees were there used as the safer, if not the only, means for the protection of alluvial basins. Indeed, I do not now recall a stream of any great magnitude in any part of the world whose floods are controlled otherwise than by a system of dikes. This fact alone is a suggestive, if not a conclusive one.

Let us, in this connection, consider for a moment that veritable child of the rivers and the sea, the plucky and indomitable little Kingdom of Holland. She completed, I believe, her original system of dikes in 1825. But we read that as late as 1833 (I am not good at figures, and you will pardon me while I refer to my notes) the whole of the Netherlands only contained 5,611,800 acres of land. By that time they had proved the dikes, and therefore they were extended from year to year until, according



to the Cadastral survey of 1877, they had increased their area to 8,148,020 acres. In other words, this courageous and remarkable people, laboring under many difficulties, inhabiting a little kingdom which, figuratively speaking, one of these fair ladies in the balcony could cover with her cambric handkerchief, had created and actually rescued from the sea 2,536,160 acres of land, worth \$1,268,080,000, at a cost equal to \$61,000,000 in American money.

This is a most remarkable record, but it was not made in a day. Neither was their original system of dikes the work of a day. Quite the contrary. It represented years of arduous toil, and during this period of transition our indomitable Dutch friends underwent the same hard experience that many of you here in this audience have undergone when, with hipboots and high-water paraphernalia, you boldly waded out in the "overflow" to save some stubborn old mule or refractory old cow from a watery grave. [Laughter and applause.] There were in that period from 1702 up to 1825, we are told, disastrous crevasses that occurred on an average of once in every eleven years, carrying death and destruction throughout a large part of the Netherlands. During all this trying ordeal the Dutch toilers had with them another thing which I dare say they didn't want. They had to contend, just as we have had to contend, with a numerous swarm of critics and croakers, who sounded their discordant notes far and wide while

Flapping from out their condor wings  
Invisible woe.

Happily, however, the goal was at last reached. The dikes were built to the ultimate grade; the system was made perfect. And mark you, gentlemen, from that good hour in 1825 up to the present time Holland has been practically immune against the floods, and her argosies are now on every sea, while her treasures are in every land. Now, if you won't say anything about it I will tell you a little secret as to how I know about these treasures. I know because some Dutchman with an unpronounceable name has a big mortgage on one of my plantations [laughter], but when Uncle Sam perfects, as he intends to do, our system of dikes, I will get even by lending my Dutch friend some money and taking a mortgage on his [laughter and applause], unless, indeed, it is only a prospective plantation, still covered by the waters of the Zuyder Zee. [Laughter.]

#### Long Strides in the Right Direction.

Now, gentlemen, what the Dutch have done we can do. The fact is, we have already done so. Perhaps that statement is a little too broad, and it may be, in my enthusiasm, like the old darkey my friend, Ben Humphreys, tells about, "I overspoke myself." [Laughter.] But I will leave Congressman Humphreys to tell you that amusing and instructive anecdote when you adjourn to mix your Mississippi-river water with something decidedly more palatable.

Meanwhile I am going to qualify my statement and bring myself strictly down to the facts and figures. These will show that we have made long strides in the right direction. The statistics which I will submit in a few minutes (don't be alarmed; they are not very long) will demonstrate this to your satisfaction. They were kindly furnished at my request by the very able and obliging chief engineer of the Board of Mississippi Levee Commissioners, Capt. C. H. West. Let me premise, however, by stating what is also "ancient history" to many of you, that prior to the enormous flood of 1882 the general government had extended no assistance, financial or otherwise, in the construction or maintenance of our system of dikes. The first levee ever built in the Mississippi valley was constructed along the front of this city, now the metropolis of the South, but then a mere village, by the great Frenchman, Bienville. Thereafter the system was gradually extended, but it was entirely dependent upon the local organizations, with the help of some of the lower riparian States. The result was that when we came in contact with the immense and ever-memorable flood of 1882, that hurled itself against our bulwarks like an invincible army, we found our levees weak and altogether ineffectual. Since then, however, millions of dollars have been spent in its betterment by the general government and by these same local and State authorities, always working together in perfect harmony. Now, mark you, here is the point I want to make—the figures furnished by Captain West prove that the crevasses steadily decreased in proportion as the levee system was perfected. They show that

In 1882 there were.....	282 crevasses.
In 1897.....	38 crevasses.
In 1903 only.....	7 crevasses.

Now, let us notice the mileage of levees affected by the floods:

In 1882 the floods swept away.....	54 miles of dikes.
In 1897.....	8.7 miles of dikes.
In 1903 only.....	2.5 miles of levee injured.

These figures speak eloquently—may I not say conclusively?—in favor of the levees. They prove, as the statistics in Holland prove, that whenever and wherever a system of dikes is built to the ultimate grade, under the direction of watchful and competent engineers, it can be relied upon for perfect, practical and permanent protection from the onslaughts of the floods. [Applause.] I grant you that here and there weak places may develop, because no human work can be made absolutely and altogether perfect; we all know that; but if at long intervals an accident should occur the damage will be circumscribed within very narrow limits, and when engineering methods improve, as they will do, it would be speedily controlled. In the meantime any general disaster such as that which has swept over parts of the alluvial basins in former years will be absolutely impossible.

Now, gentlemen, this brings us to two exceedingly delicate and important questions. First, what will be the additional cost of bringing the entire line of levees up to ultimate grade? And second, by whom should this expense be borne? I was informed on yesterday that the report of the Mississippi River Commission for the present year had not gone to press. I shall assume, however, that there will be no material change in that report from the one issued by that influential and eminent body in 1902, except, of course, to add the additional outlay that has been made in the betterment of the system during the past twelve months. According to the report made by the commission last year, the material then contained in the levees amounted in the aggregate to 167,236,540 cubic yards. They estimated that it would require to bring the entire line of levees up to the ultimate grade 94,054,488 additional cubic yards, which they said would cost \$18,810,897.60. I am unable to say, as I have not had the advantage of seeing this year's report, what has been the total sum expended

on the levees within the past twelve months. It is a large amount, I am sure, and I will add that the system has been vastly improved. Suppose, however, that we discard that from our consideration, and, in order to provide for every possible contingency, let us assume that it will cost additionally to perfect the system of dikes from Cairo to the head of the passes \$20,000,000. This, from one viewpoint, is a great sum, but if the government should undertake the work the additional revenue derived directly and indirectly from the increased products and the increased purchasing power of the valley people would soon pay back the principal with an enormous rate of interest. However that may be, all are agreed that this work of supreme importance should be done. It must be done. And I will ask you, gentlemen, to determine in your wisdom who shall bear the expense. Upon whom devolves the sacred duty of protecting the countless homes and the billions of dollars of American capital here invested from the aggressive waters of this mighty river? Can it be possible that Thomas Jefferson, perhaps the greatest of American statesmen, as he was undoubtedly the most versatile—can it be possible that he violated the Constitution of his country as he construed the instrument—righteously violated it in the acquisition of this royal domain from the French emperor that a large part of it might be left forever and a day in a state of nature; that its future inhabitants, the noble and big-hearted men and women who have now collected here, should be left to the mercy of the waves? Never. Strict constructionist as he was, Jefferson would have devised some plan to have saved the nation from this grievous wrong—some means to have given to the country and the world the many advantages that would come from the improvement of this immense territory.

Look at this large and handsome map. The contour is not as clearly marked as it might have been by the red lines; still you can here see the vast and fertile domain which a great American orator (I believe it was Rufus Choate the elder) defined some years ago in his eloquent and impressive way as "the imperial valley of the Mississippi." The distinguished New Yorkers who have honored us with their presence will observe that it embraces a considerable part of their far-distant State. Taking that as a coin of vantage, and glancing toward the setting sun, you see it extends mile on mile and league on league until its western boundary is lost to view in the gorgeous coloring and the barbaric splendors of the Grand Canyon of the Yellowstone.

Think of it, gentlemen, in all of its majestic proportions. No less than thirty-two States and Territories, or parts thereof, are within the confines of this marvelous valley. They represent an area of 1,240,050 square miles. This is about 41 per cent. (leaving out of consideration Alaska and the isles of the sea) of the whole area of the United States. These fertile lands, divided here and there by countless streams, with perhaps 25,000 miles of navigable waters, are owned and possessed by no less than 35,000,000 American people. Their forests and their hillsides and their valleys are in numbers as the stars of the firmament or the sands of the seashore. As all these forests are felled, and as the drainage of all these hillsides and valleys shall become improved, they will hurry southward the mad flow and the whirling and "the rushing of the mighty waters." We can almost hear them now! They sound in our affrighted ears as the ocean sounds when, in the language of the gospel, "deep calleth unto deep with the voice of Thy waterspouts; Thy waves and Thy billows have passed over me."

#### The Drainage of a Stupendous Area.

Where do they go, these stupendous waters, representing the drainage of 41 per cent. of our common country? Where do they go, I ask, in their onward rush to the sea? Do you realize, gentlemen, that every single drop of water that falls or flows on or over this vast area must pass, and does pass, by the very doors of this hospitable city? Do you understand and realize that in all of its great significance? If so, gentlemen, you also realize, perhaps as you never did before, that the profound and aggressive intellect of the New England statesman, James G. Blaine, struck straight to the heart of this important subject when he defined the Mississippi river as "the nation's greatest sewer." [Applause.]

Who, then, shall provide for and take care of this sewer, the nation's sewer? That is the question. Upon whom devolves the sacred duty of doing that? Will the American people confess to a lack of humanity—and, without intending to be harsh, I might almost say a lack of common decency—by permitting their sewer, the nation's sewer, to overwhelm the people and the property of the lower valley? Never; I will not believe it. [Applause.]

It has now been something like thirty-eight years ago since, a mere youth, I fought as best I could beneath the Stars and Bars for what I believed to be the right. Thank God, I have never since seen the time or the place when I was ashamed of it or when I apologized for it or when I regretted it. [Great applause.] I don't know how it may be with other Southerners, but as for my single self,

In Dixie land I'll take my stand,  
I'll live and die in Dixie. [Great applause.]

Now, I wouldn't have any of our Northern friends who have honored us with their presence to think for a moment that they have come in contact with a 1903 freak—an "unreconstructed" man. Such is far from the case. Since the hour when the great silent captain, Ulysses S. Grant, said "Let there be peace," the whole South has accepted with the utmost good faith the arbitrament of the sword. [Great applause.] And so, as it now stands, there is no man within the confines of our common country more willing than I, if need be, to fight to the last beneath the time-honored and invincible folds of "Old Glory." [Applause.] If need be, I stand ready to help carry the Stars and Stripes, as I would have carried the Stars and Bars, to the isles of the sea—yea, to the uttermost parts of the earth. [Applause.] But, gentlemen, if I could for a moment suppose that our common country would be so derelict in its duty as to permanently neglect these big-hearted, noble and chivalrous men and women who have cast their fortunes in this alluvial basin, I must say that I would no longer feel as I do today. I could no longer feel, as an American citizen should feel, that intense pride and love of country such as prompted the humblest soldier in Caesar's legions to say "I, too, am a Roman citizen."

#### No Danger of Permanent Neglect.

But there is no danger of our being permanently neglected by the national government. I am a firm believer in the ultimate triumph of the right. Besides, I have an abiding faith and confidence in the American people. I feel, then, that in good time the general government will come to our relief. There will, no doubt, be more or less of opposition. There always is. Some of our republican friends will vote

against legislation of this sort "because its benefits would be local and partial." At the same time some of our beloved democratic fossils, who don't yet know, perhaps, that General Jackson is dead, will oppose these same appropriations because, forsooth, they are altogether unconstitutional. [Laughter.] From both, gentlemen, let us appeal to Caesar, that is, to the great body of the American people through their accredited agents in the national Congress. You need not fear that they will be led any longer by the reactionaries and obstructionists. The republicans in Congress will be under the leadership of broad and liberal men, and as for the democrats, they will be led by that peerless parliamentarian and Mississippian, John Sharp Williams. [Great applause.]

We live in a practical and utilitarian age. I expect, then, all parties will silently agree with Thomas Jefferson, who thought when he made the Louisiana purchase that if he or Congress did a good thing the American people had sense enough to know it and to approve of it. Of one thing rest assured, the country will not continue to spend millions of dollars to develop the arid West unless they extend equal privileges to the devoted and loyal South. [Applause.] So, I say, the members of Congress will not follow the obstructionists. They will rather lend their attention to the advice and utterances of that great and good man and eminent American patriot, Abraham Lincoln. [Applause.] In his plain, straightforward and common-sense way he has not only answered, but has utterly "smashed" and demolished the two arguments that I have alluded to, and which perhaps would be the most common, if not the most potent weapons in the hands of the opposition. I am sure you will gladly hear what Mr. Lincoln had to say on this subject in one of his speeches. My notes fail to designate the date, but that is immaterial. Lincoln had this to say—hearken well to his words of wisdom:

Now for the second portion of the message, namely, that the burdens of improvements would be general, while their benefits would be local and partial, involving an obnoxious inequality. That there is some degree of truth in this position I shall not deny. No commercial object of government patronage can be so exclusively general as to not be of some peculiar local advantage. The navy, as I understand it, was established and is maintained at a great annual expense, partly to be ready for war when war shall come, and partly also, and perhaps chiefly, for the protection of our commerce on the high seas. This latter object is, for all I can see, in principle the same as internal improvements. The driving of a pirate from the track of commerce on the broad ocean and the removing of a snag from its narrow path in the Mississippi river cannot, I think, be distinguished in principle. Each is done to save life and property, and for nothing else.

The navy, then, is the most general in its benefits of all this class of objects, and yet even the navy is of some peculiar advantage to Charleston, Baltimore, Philadelphia, New York and Boston beyond what it is to the interior towns of Illinois. The next most general object I can think of would be improvements on the Mississippi river and its tributaries. They touch thirteen States. Now, I suppose it will not be denied that these thirteen States are a little more interested in improvements on that great river than are the remaining seventeen. These instances of the navy and the Mississippi river show clearly that there is something of local advantage in the most general objects. But the converse is also true—nothing is so local as not to be of some general benefit. [Applause.]

Mr. Lincoln also said in an address to the people of Sangamon county on March 9, 1832:

Time and experience have verified to a demonstration the public utility of internal improvements.

#### Magnificent Ends to Be Attained.

That, I think, gentlemen, is the new and the accepted and the sensible doctrine for both of the great parties of the country today. With these words of encouragement ringing in our ears we will confidently appeal to the general government for the protection of this great alluvial basin. Every consideration of policy and of right would seem to dictate that this appeal should receive prompt and favorable response. This work of supreme national importance should be done for many controlling reasons. It should be done:

1. Because it will facilitate the transmission and rapid delivery of the vast volumes of the United States mail, a matter of great importance not only to the people of the valley, but to the whole nation, and I might almost say to the whole civilized world. This will be brought about by protecting various railroads, which are otherwise subject at times to inundation.
2. Because these same railroads will be needed, or may be needed, in time of war for the rapid transportation of troops and military supplies.
3. Because, in the long run, levees will help, as many eminent engineers believe and tell us, in deepening the channel of the river, thereby improving the navigation of this great national highway, which, with its dependent tributaries, will always help to regulate and cheapen freight rates, upon which is dependent, in part at least, the prosperity of millions of American farmers and other producers.
4. Because it is the sacred duty of the nation to control and use for its own, so as not to damage others, this being a familiar principle of law and equity. In other words, it is the duty of the nation to control and regulate the waters of the nation's river, so that they will not endanger lives and property along its banks.
5. Because, gentlemen of the convention, this is not only a river; it is something more than a river; something more, if you please, than God's great highway to the sea. It is also, as Mr. Blaine has said, a great national sewer, upon which is dependent the drainage of some thirty-two States and Territories. Common sense, common decency and common humanity would seem to dictate that this drainage, some of it from far distant States, should not be permitted to overwhelm the dwellers and the property of the lower valley.
6. Because, in reclaiming this vast area, you will give the nation a new territory, a new world—the Eldorado that was long sought and at last found by De Soto, though he knew it not. The increased products from this source will keep the balance of trade in our favor and will permanently maintain for many years our present proud pre-eminence as the largest export nation of the world, while it will give plenty and prosperity to the present residents of the valley and to countless generations yet to come.
7. And, finally, gentlemen, discarding all reason, throwing all business and sordid considerations to the winds, we confidently appeal to the great loving heart of the American people, which "is in the right place" and which will respond generously in this, as in every other noble cause. But, gentlemen, I prefer, after all, to rely upon the justice of our claim. It is the duty of the nation to do this work, and therefore it will be done. The doctrine of noblesse oblige canopies the world. It is obligatory upon all alike who have any degree of power and influence. It must be obeyed by the nation, as it is obeyed by the individual citizen, and, being the duty of the nation,

we can be sure that the appropriations will be made. This would be the case if no material national benefits were to follow. But, happily, in this case the performance of a sacred duty goes hand and hand with self-interest, for you may be sure when these valuable lands are at last reclaimed they will pour their priceless treasures, a veritable shower of gold, into the lap of our beloved country. [Applause.]

Let us consider for a moment in this connection the results of somewhat similar, but more hazardous investments. You will remember that years ago when General Grant purchased Alaska he paid Russia, I believe, about \$7,200,000 for this territory. At the time the expenditure was savagely criticised as a reckless waste of the public funds. Last summer I happened to have the pleasure of meeting Alaska's affable and able chief executive, Gov. John G. Brady. He was kind enough to send me his last report, and from that I gathered this interesting and important fact that if we discard the output of gold and all other valuable metals; if we leave out of consideration the agricultural products, the timber exports, the fur fisheries and, indeed, all the other fisheries except that of salmon, it appears that the value of the salmon pack alone for 1902 actually exceeded the purchase price paid by General Grant for the entire district. [Applause.]

Again, you will remember that we paid Spain \$20,000,000 for the Philippines. Now, I am going to make a remark that I am afraid will incur for me the censure of my distinguished friend, John Sharp Williams, who I notice on the platform, when I say that, so far as I am concerned, I am glad that the Stars and Stripes still wave over the Philippines. [Great applause.] And it will continue to wave, my fellow-citizens, "long after you and I, like specks of moving cloud, shall have faded into the infinite azure of the past." [Applause.] The present generation shall not have passed away when it will be generally recognized and universally admitted that the original purchase price, with all the superadded expenses, are mere bagatelles as compared with the benefits to be derived. I wouldn't have said this, perhaps, a few months ago after just coming under the spell of the most forceful, eloquent and persuasive article that it has ever been my good fortune to read on this subject, the powerful argument delivered before the national Congress by Mr. Williams. Then I felt like saying to him, as Agrippa to Paul: "Almost thou persuadest me to be a Christian." [Applause.] But, gentlemen, if the retention of the Philippines should do no other thing, it would repay the nation a hundredfold for all of its outlay by forcing the early building and completion of an Isthmian canal. [Applause.] This will infuse new life-blood into the whole country, and will be a particular benefit to our beloved Southland. As to this great metropolis of the South, whose delightful hospitality we now enjoy, and which makes us almost feel, like the lotus-eaters, that here we would like to abide forever, the Isthmian canal will make its capital increase to an incalculable amount, and there is no reason why, ten years hence, its population should not be a million of souls. [Applause.]

My point is that if we can make these wise expenditures away up near the Arctic circle and in the far-off isles of the sea, why should not the nation improve its own? Why should the government hesitate to develop this country, which, as someone remarked to me on yesterday (I believe it was Mr. Tompkins), is in fact, as in shape, the heart of the nation? You can almost see it throb with joyous exultation at these developments that are to follow. Why should we hesitate at this, when every child knows that the undeveloped wealth here will exceed the combined wealth of Alaska and the Philippines multiplied time and time again? [Applause.]

I believe there are something over 19,000,000 acres of land in this alluvial valley, of which perhaps less than one-third are now under the plow. The ultimate additional value of all this property should equal, if it does not exceed, the value of somewhat similar lands on or near the banks of the Zuyder Zee. Why, think of it! This alone would add to the wealth of the country \$9,000,000,000. This new territory would not be gained by the wiles of diplomacy, nor by war, a bloody trophy and a lasting evidence of man's inhumanity to man. It would be won in the prosecution of a great work from the waters of this mighty river. The increased annual value of its products alone you could safely figure at not less than \$550,000,000. Add to this, as I have said on another occasion, the increased manufacturing and other urban values, and we would give the nation a royal prize before which the vaunted treasures of Ormus and of Ind must forever pale their ineffectual fires. [Applause.]

Gentlemen, every consideration of policy and right calls the nation to the accomplishment of this noble work. Mark you, it will be done, for, say what you will, the American Congress always represents the highest type and standard of American citizenship, and the people of the valley can confidently rely upon its wisdom and justice. [Great applause.]

## HOPES OF VALLEY PEOPLE REVIVED BY THE GOVERNMENT

By HON. W. W. HEARD,  
Governor of Louisiana.

Mr. Chairman and Gentlemen:

In behalf of all the people of Louisiana, who will observe with eager attention all the proceedings of this truly national assembly, I welcome you with all my heart to our great Commonwealth and to this world-renowned metropolis. You have come from many States—from a domain so vast in extent and so limitless in its natural wealth and resources that they would constitute an empire so powerful that the proudest nations of the earth would do it homage upon terms of perfect equality. Yet these possessions are but a part—great, it is true—of the greatest republic and the greatest government in the family of nations.

Considering these incontrovertible facts, it would seem as if it would be but a plain public duty for this colossal government of ours to adopt the requisite course and to devote the required means to place this vast domain through which flows the Mississippi and its tributaries in such a condition as to allow a tide of population to occupy its waste places, and in unison with its actual population bring forth for their own benefit and for the enrichment of all the country the enormous wealth that this imperial domain possesses to a large extent in a dormant state.

We cannot but pause to admire the broad and enlightened statesmanship—calculating, if you will—of Old England in capturing and operating the Suez canal and in the very recent past in investing scores of millions in the damming of the old Nile.

Is it not bewildering, then, when we come to think of the parsimony exhibited by



a chain of Congresses in the appropriations that they have made toward the improvement of waterways and the protection of territory before which the Nile and the country of Egypt would dwindle into comparative insignificance?

Can we admit that in this respect these Congresses have done justice to the business acumen and enterprising spirit of the American people?

Therefore it will be the mission of this representative convention to so vividly and intelligently exhibit before the country the magnitude of the interests involved in the questions over which you will deliberate that the coming Congress and the succeeding ones will deal with those interests in the way that so progressing and progressive a country as ours should deal.

The following, which is taken from a memorandum furnished me by the State board of engineers, will doubtless aid you in your deliberations and conclusions:

The delta of the Mississippi river subject to overflow extends from Cape Girardeau, forty-five miles above Cairo, to the Gulf of Mexico, nearly 600 miles in an air line, and varies in width from twenty to thirty miles, amounting in area to 29,790 square miles.

The Mississippi river, which flows through this delta, carries the drainage of 1,240,050 square miles, which is 41 per cent. of the total area of the United States. This area drained extends from the Rockies to the Alleghanies and from Canada to the Gulf of Mexico. It covers 1800 miles in longitude and 1500 miles in latitude. It drains ten entire States, parts of twenty-two other States and Territories, besides a part of two provinces in Canada.

The States entirely draining to the Mississippi river are Nebraska, Kansas, Oklahoma, Indian Territory, Missouri, Arkansas, Tennessee, Kentucky, Iowa and Illinois. The States draining in part to the Mississippi river are Montana, North Dakota, South Dakota, Wyoming, Idaho, Colorado, New Mexico, Texas, Louisiana, Mississippi, Alabama, Georgia, North Carolina, Virginia, West Virginia, Ohio, Pennsylvania, Maryland, New York, Indiana, Wisconsin and Minnesota. The area thus drained by the Mississippi river is as great as the combined area of Austria, Germany, France, Holland, Italy, Spain, Portugal and Great Britain.

Thousands of miles of streams and rivers carry this drainage to the Mississippi river, and of these 15,000 miles are navigable streams.

The average rainfall carried annually to the sea by the Mississippi river amounts approximately to 85,000,000,000 cubic feet, or 155 cubic miles of water, and this is estimated as being only 25 per cent. of the total rainfall over the basin, the remaining 75 per cent. being lost either by evaporation or else by absorption and percolation through the ground.

Every year as the country becomes more open, better tilled, and therefore better drained, the volume of water finding its way to the Mississippi river increases and also reaches the river more rapidly, owing to the improved condition of drainage throughout the country, thereby swelling and increasing the intensity of the floods.

The damage is made greater from the fact that the lands of alluvial formation are highest at the banks of the stream. On the Mississippi river these banks slope away from the river at the rate of from three to twelve feet in the first mile, then at a diminishing rate until a distance of two or three miles from the river is attained, when the low level swamp is reached.

Between Memphis and Vicksburg to the east of the river is the rich Yazoo basin, subject to overflow and embracing 6648 square miles. Between Helena, Ark., and Arkansas City on the west of the river is the White river basin, subject to overflow and embracing 956 square miles. From Arkansas City to the Gulf, to the west of the river, are the Tensas, Atchafalaya and Lafourche basins, all highly populated and thoroughly cultivated for cotton and sugar, which are subject to overflow, and which embrace 13,044 square miles. Finally, to the east of the river from Baton Rouge, La., to the Gulf are situated the rich Pontchartrain and Lake Borgne basins, within which is the city of New Orleans, all of which is subject to overflow, and covers 2001 square miles.

These basins are the richest alluvial land, and have been rapidly opening to cultivation. On the lower river, from the Louisiana State line to the Gulf, they have been settled for about 150 years. They yield rich crops of cotton and sugar, yielding more in dollars and cents per acre than any other lands in the United States. They frequently give us as much as a bale and one-half of cotton to the acre, which represents a value of \$75, while the sugar yield is even greater. Hence the people have taxed themselves to the limit to keep away from their fields and homes the flood water due to the drainage of 41 per cent. of the United States.

In order to do this, the people have subdivided the vast territory just mentioned into some twenty levee districts, organized under the various State laws, and operated by boards of commissioners generally appointed by the governors of the various States, although some of them are elected.

These boards have by law the power of levying and collecting taxes to build levees, and this taxation takes all manner of forms to bring as large a revenue as possible. All the districts have an ad valorem tax on the assessed value of the property within their boundaries, varying from five to sixteen mills on the dollar. Additionally, they tax themselves from two and one-half to five cents on each acre of land in the district. Also they levy a railroad tax varying from \$5 to \$100 per mile. Most of the districts tax every bale of cotton raised within their confines from twenty-five cents to one dollar. Every thousand pounds of sugar raised within their territory is taxed from twenty-five to fifty cents. Every sack of rice, barrel of potatoes or of onions or oranges is taxed from three to ten cents; in fact, all of the produce is taxed, and even the oysters do not escape it, as they are taxed a certain sum per barrel, on the ground that the exclusion of fresh Mississippi water from their beds is conducive to their health, and therefore to their quality.

In addition to this, these levee boards have issued large amounts of bonds, predicated on their revenues, and additionally the State of Louisiana imposes a tax of one mill for levee purposes on all of the State's assessments, whether they be mill property above overflow or bottom lands subject to overflow. The tax in the several levee districts in this State is very heavy, amounting in most of them to 1½ per cent. Besides the \$6,655,200 of bonds already applied to levee work in the Mississippi valley, the districts derive from taxation \$1,960,000 annually. Of this, it is safe to say that \$1,500,000 is actually expended in earth work, the balance being devoted to the payment of interest on bonds issued and the cost of administration and operation.

Prior to 1882 the United States government contributed nothing to levee protection. After the great flood in 1882 the Mississippi River Commission spent some

money on levee building under the theory that in order to obtain and maintain deep-water navigation a confinement of the waters within the banks was necessary. For many years following the amount spent by the government on levees was limited to such stretches as were deemed by the Mississippi River Commission as falling under the above consideration. No money, however, would be spent for the express purpose of affording protection from overflow.

Four or five years ago Congress removed this objectionable clause from the Rivers and Harbors Bill and allowed the River Commission to spend such money out of the appropriation for the purpose of giving protection from overflow as it deemed expedient. In accordance with this policy the River Commission has allotted approximately \$1,000,000 per annum to levee building. This amount is effective, less the sum to be deducted for the cost of administration, which is about 5 per cent., leaving about \$950,000 to be expended for earth work.

The help of the federal government has revived the hopes of the residents of the valley, who have been reduced to despair by the great overflows of 1882, 1884 and 1890, and although the great flood waves of 1892, 1893, 1897 and 1903 have broken the records of the past, and their successive records culminated in the great flood of this year, the amount of territory overflowed this year from breaks in the levees is only 10.7 per cent. of the area of the valley. Hence the alluvial residents are taking new heart and are straining every effort to build their levees higher and stronger.

The efforts thus shown evidence the magnitude of the work done for the effective control of the great river and its tributaries under the only system that could be carried on with the meagre means at hand. These means, drawn in greater part from the property-owners whose all is at the mercy of the waters descending upon them from the upper country, impose burdens upon them that the national government should not permit them to stagger under, since it and the commerce and industries of the country would be the principal beneficiaries from the protection that it would extend to these magnificent lowlands.

Navigation and the protection of these lowlands could be vastly promoted by some plan designed to deflect the flood waters of some of its tributaries for the irrigation of the arid lands of the Rocky mountain region, the Territories and the Texas Panhandle.

Surely American engineering skill, which has accomplished so much in this country and abroad, should be capable of devising a system of works combining all of these purposes. The success of such a system would have marvelous results, and while the government should be appealed to for appropriations adequate to afford ample protection under the actual plans, it will not be inexpedient for this convention to give consideration to this subject, in which so many States and Territories would have a large interest. The subject is not a new one, and it has already received a thoughtful and favorable consideration from civic bodies wielding considerable influence upon public opinion and Congress.

I trust, gentlemen, that you will not proceed with too much haste in your deliberations, for much is expected from the talent, the knowledge and the patriotism which are assembled in this great convention.

You are welcome, thrice welcome, to our splendid metropolis, and I want to assure you that this welcome will endure as long as you may wish to remain within its limits. You are at home here, Mr. President and members of the convention. [Great applause.]

## WATER THE CHEAPEST WAY TO MARKET.

By Mr. J. L. VANCE of Ohio,

President of the Ohio Valley Improvement Association.

*Mr. President and Gentlemen of the Convention:*

I intended to second the nomination of our distinguished chairman, Governor Stanard. I am glad now that I didn't do it, because, while I have listened carefully today to all the remarks that have been made, and with much pleasure to the statistics given in regard to this great valley, it yet remained for you, Mr. Chairman, to speak for the first time of the greatest tributary of the Mississippi, the mighty Ohio. [Applause.]

I ask your indulgence, and the indulgence of the convention, for but a few minutes. I understand that we have now reached the point where the real business of the convention begins. I am here in somewhat of a dual capacity. Under the commission of the governor of Ohio, I represent that State upon the floor of this convention. [Applause.] By the unanimous vote of the Ohio Valley Improvement Association, together with my distinguished friend, Captain Ellison, who is the secretary of that body and the president of the Cincinnati Chamber of Commerce, I have the honor to represent that association, with its 15,000,000 constituents. [Applause.] We are here to represent and to speak for that organization in all of its ramifications in all its fourteen States, beginning away up at Cattaraugus, in the State of New York. And here I want to object for one moment to a few words of the distinguished chairman. Sir, there are no longer any Northern waters, or Southern waters, or Western waters, or Eastern waters; they belong to us; they are our waters; they are the free channels of commerce of all the people of our country. [Great applause.]

The Gulf of Mexico should become the harbor of the United States, and, to use the exact language that I used at one time before, the Ohio and other tributaries of the Mississippi river should become the cheapest channel leading to it, and all the ships of the world should come to this imperial city of New Orleans to load or unload their wealth of cargoes. [Applause.]

I will detain you but a few minutes longer. [Cries of "Go ahead."] I said a moment ago that I was here in a dual capacity. When I was first notified by your distinguished secretary—and you will permit me today to pay him the compliment of saying that the interests of the city of New Orleans and the interests of the Mississippi valley are well taken care of by Captain Bryant [applause]—when I was first notified by him of this convention it was my understanding that it was to be but a one-day meeting. I now learn that the time has been lengthened to three days. Mr. Chairman and gentlemen, if you do your work well it will take you two days, anyhow, and you will have to lap over to the third day to listen to some of your distinguished citizens. [Laughter and applause.]

Now, gentlemen of the convention, I don't know just exactly where I am "at." I



have listened to all of these gentlemen today, and your chairman is the only one who has mentioned the Ohio river. I don't know what my distinguished friend on the right, Mr. Anderson, one of the leading and most able citizens of Pittsburg, who comes to your convention from a distance further than anybody else here; I don't know what my friends upon the left—I don't know what part they are to take in this convention. We are all here for business. Governor Stanard has said that St. Louis and that section want your help. Well, we want your help, too, [applause], and let me tell you, gentlemen, that you need and must have our help to enable you to succeed. [Laughter and applause.] And when you join the forces of these twenty-seven States together, and bring their members of Congress, both in the House and in the Senate, forward as one man for the improvement of our inland waterways, all the power that the politicians can array against us cannot prevail. [Great applause.]

At the head of the great Ohio river, 2000 miles from where we stand today, is the greatest manufacturing center in the world. Why, they make there, for shipment to the markets of the world, 100,000,000 tons of freight per year. This must go to these markets, and the cheapest way to do it is by water. Improve the Ohio, and fix up the Mississippi river until it is navigable from Cairo down, and you will see the great mass of tonnage of Pittsburg coming to the city of New Orleans, seeking through its gates the markets of the world. [Great applause.] All along that river are gigantic manufacturing interests, the greatest in this country, their products, seeking also the markets of the world—and they must come down the Ohio. Imagine for a moment, my friends of New Orleans and the Mississippi valley, that you could pull out the fires from under the furnaces in the Ohio valley; that you could stop the smoke ascending to Heaven from those immense chimneys; that you could call forth the miner from the mines and stop the production of coal and iron and steel, and all the other great products of that richest of all valleys given our country by the Creator—did you ever realize, if these things should come to pass, that you would not see the smoke of a steamboat except your local packets upon the bends along the Mississippi river, and that your commerce would dwindle until it became imperceptible? [Applause.] Did you ever realize further, that that Ohio valley produces more tonnage than the whole Mississippi valley combined outside of it? [Applause.] Did you ever realize that more passengers are carried upon the Ohio river than upon the Mississippi and all its other tributaries?

I have just one or two other little things to say. I have always believed in the future of this great Mississippi valley of ours. I know that its wealth is inexhaustible. I know that it is the duty of the government to help along the improvement of this river, and today the question (here I differ with all the speakers who have preceded me) is not a local question; it is not a national question; it is an international question. [Applause.] The sooner you realize that, the sooner you adopt and act upon that fact, just that much quicker will you accomplish what you came here to do. [Applause.]

When the Ohio river is improved and the Mississippi river is improved the city of New Orleans will take on new life and will become the greatest export town in America. [Applause.] I am not speaking idly when I make that assertion. It is a fact indisputable that trade follows the cheapest line of transportation. The great coal mines, the iron and steel works and all other industries that employ capital and labor in the Ohio valley, and those upon the banks of its tributaries, beginning with the Monongahela and on down to the Wabash, stand ready today to ship their coal, their structural iron and steel and all other heavy freights they have to New Orleans for transshipment to the markets of the world. [Applause.] By you and by those who act under your guidance a great duty is to be performed. I trust it will be performed in a spirit of fairness to all sections. [Applause.]

The president of your convention this morning took occasion to refer to the war. While he was speaking I recalled the fact that I was stopped at Vicksburg on my way down the Mississippi river forty years ago. [Laughter and applause.] I remember that one of my friends on the other side of the fence (I don't know who he was) gave me a reminder that has been with me ever since, and that I can't get rid of. [Laughter and applause.] But that man and all the other men who were just across the border holding that city with almost unparalleled heroism found on the outside of their gates an equally heroic people, and after the battle was lost, the victory won, and peace declared, then, thank God, they became brothers again. [Great applause.] United as we are today, we cannot only sweep off the armies of the world, but we can control that which is of much greater benefit—the markets of the world. [Applause.] Our products will find their way down the Ohio and down the Mississippi to New Orleans, and from there to all the ports of the world. Mr. Chairman and gentlemen, I thank you very much. [Applause.]

## THE MISSISSIPPI THE PROPERTY OF THE NATION

By HON. N. C. BLANCHARD of Louisiana.

Mr. President and Gentlemen of the Convention:

This is a great country of ours. It has the largest rivers, the greatest lakes and the longest line of seacoast of any country on the face of the globe. It is too great and grand and glorious for any sectional spirit longer to be tolerated. Away back in the early part of our country's history, when President Jefferson negotiated the purchase of that vast territory extending from the Gulf of Mexico on the south to the Pacific ocean and the British possessions on the far northwest, the principal inducement actuating him was that the United States of America might come into the control of that vast system of waterways composed of the Mississippi river and its tributaries. That country, including the Mississippi river, was purchased out of the common treasury. The Mississippi river, therefore, is doubly the property of the federal Union. [Applause.] It is its property not only by reason of the fact that we acquired it by treaty with France, but we acquired it as a piece of property by purchase out of the treasury.

If the Mississippi river be the property of the federal government, if the government's ownership and jurisdiction over it is paramount, which no one denies, then there results to the government a corresponding responsibility with respect to that river. [Applause.] The principle upon which such responsibility rests is embodied in that salutary maxim of the Civil War, *sic utere tuo non alienum laedas*. The gov-

ernment of the United States, owning the river as it does, has no right to permit the river to remain a terror and to become a demon of destruction to those who live in its lower valley. [Applause.]

It took many years of effort on the part of devoted men to hammer that idea into Congress and to develop favorable opinion on that line among the people of the American Union. This great convention, fellow-citizens, sits here tonight, the representatives of a large portion of the sovereign power that is vested in the American people. You are here to make known your wishes to Congress, and let me tell you that when you speak, when any considerable portion of the American people speak, and when Congress knows that public opinion is aroused demanding that certain things be done, those who compose the National Legislature at Washington will not only hear, but they will heed. [Applause.] I know whereof I speak, because I was there for many years. The ear of senators and congressmen is close to the ground, listening to the tramp of public opinion and to ascertain which way it is moving on any great question. [Applause.]

Fellow-citizens, we are here tonight to insist upon Congress going yet further than Congress has ever yet gone in the direction of the recognition of its twofold duty to the great river. But while we are here tonight in this convention to insist that Congress take charge of the river entirely to prevent its floods, I am here to tell you that Congress in the past has not been illiberal; that much has been accomplished, and from that I argue that Congress will continue to be liberal, and that this other last and final step in the control of the river, which this convention is here to demand, will yet be taken by Congress in the near future. [Applause.]

Fellow-citizens, the struggle to impress upon Congress its duty in respect to the Mississippi river has been a long and memorable one. When the war closed there were no levees upon the Mississippi river except a few disconnected or unconnected lines, and this vast alluvial valley was the plaything of the floods of the Father of Waters. When the people of the South came into their own again (by which I mean when the government of the Southern States passed into the hands of the intelligent and property-holding classes), representatives and senators of those classes were sent to Washington, and they took up the fight for the river not only to improve its navigation, with respect to which no one doubted the constitutional power of Congress to deal, but also on the proposition that it was the duty of Congress to assist in controlling the flood waters of the river, and that there was abundant justification or authority in the fundamental law for that, as well as there was for the improvement of the navigation of the river. [Applause.]

That distinguished son of Louisiana of whom your chairman has spoken, Senator Randall L. Gibson, and others with him in Congress at that time, among them Col. E. W. Robertson of the Baton Rouge District, began the work for the river and for the valley, and in 1879 a bill was passed creating the Mississippi River Commission. All the great rivers of Europe had been improved in that way, namely, commissioners had been appointed to study their phenomena and to devise plans for their rectification and improvement, and for the protection of their valleys from floods. As your chairman told you today, levee construction as a means of preventing inundation is of most ancient origin. Not only did the Assyrian Queen of whom he spoke cause dikes to be constructed to prevent the great Euphrates from overflowing its lowlands, but Nitocris, who succeeded her, paved the banks of that river with burnt brick in order to prevent the erosion of its channel by the current. So that levee construction and bank protection both date back to a very remote period. Many of the rivers of Europe, all of those of alluvial formation, have been leveed, such as the Po and the Rhine and the Vistula and the Arno and the Meuse and the Scheldt. We think we have extensive levees upon the Mississippi river, and so we have; but let me tell you that upon the Vistula in Europe some of the levees are twenty feet high and twenty feet broad at the top.

Now, the Mississippi River Commission, which was created in 1879, was given in charge the duty of not only devising schemes for the improvement of the navigation of the river, but also of devising plans and reporting to Congress what, in their judgment, was necessary to prevent the floods of the river. It was the first recognition by Congress that Congress had anything to do with the question of protecting the lowlands from inundation. But after the bill was passed creating the commission, it was not until 1881 that the first appropriation was made for the river, and it was so hampered that but little of it could be expended for levee construction. Then followed the bill of 1882. I was there, for I had entered Congress in 1881. That bill carried an appropriation of more than \$4,000,000 for the river, but it contained the restriction that none of the money should be expended for levee construction except where, in the judgment of the commission, levee construction on the banks was a necessary adjunct to channel improvement. It was all for channel improvement, to benefit navigation, trade and commerce, but not one dollar in recognition of that other duty that Congress owed to the valley, namely, to assist in holding back the angry waters of the great river. And so on, down to 1892, every Rivers and Harbors Bill that carried intermittent appropriations for the river contained always that fatal clause: "Provided, that no part of this money shall be used for the purpose of preventing inundations of the river except where, in the judgment of the commission, levee construction upon the bank is a necessary adjunct to channel improvement."

Now, those of us in Congress who took up this question early (and I was one of those; I became a member of the Rivers and Harbors Committee in 1884, my friend, General Catchings, coming in two or three years later and joining me on that committee), made the fight in season and out of season, making speeches year in and year out, hammering, I repeat, into the heads of congressmen that the government owed another duty to the river beyond improving its navigation, and seeking by our speeches to develop a sentiment in the country outside of Congress in favor of that idea. For ten years I myself made speeches of that character, and other gentlemen from Louisiana and some from Mississippi and Arkansas did the same, and it took us many years, or, from the time that the Mississippi River Commission was created in 1879, thirteen years, to reach the consummation of our hopes when we could write into the Rivers and Harbors Bill an appropriation for the great river which did not contain that restrictive clause. And how did we accomplish it, fellow-citizens? The great levee convention of 1890, of which your distinguished chairman spoke, greatly assisted in the work. Let me tell you right here that the lower house of Congress is a most difficult arena to make headway in on any proposition involving a great outlay of public money, and that it took something more than resolutions of a convention or the development of



sentiment in one particular section of the country to attain the end we had in view. In 1891 (I had then been nine years a member of the Rivers and Harbors Committee, and its chairman) I made a trip from Buffalo to Duluth, through the Great Lakes and down the western shore of Lake Michigan. I am not telling this to you with any purpose of exploiting my own deeds, but to show you in a practical way how results are reached in Congress. We are here for a practical purpose. We are here to secure from Congress the passage of acts that will commit the federal government absolutely to the control of the great river. Now all legislation, and especially all important legislation, at best is but a compromise. There are great interests in this country that need legislation as well as we need it for the lower river, and those of us in Congress from the lower river recognized that, and we knew that if we could form an alliance between the lower Mississippi river States and the States bordering on the Great Lakes that we could absolutely control river and harbor sentiment in Congress and dictate the action of Congress in respect to the same. That was the purpose of myself and others in passing through the Great Lakes, stopping at important points and making speeches, preaching to those people the doctrine of a reciprocity of interests between the Lake States and the lower Mississippi river States. And the people up there were ripe for that doctrine. They received it with open arms. They had great lake channels to improve. They had great lake ports to deepen. Why, the great lock and dam at the Sault Ste. Marie alone cost \$5,000,000, and it was yet in an incomplete state. Millions of dollars were needed for the lake ports and channels and harbors, and we needed millions for the lower Mississippi river. So a combination, if you will (and I speak plainly), was hatched on that trip, and when Congress met in December, 1891, the details of that combination were worked out in the committee room of the River and Harbor Committee, and when, in the early part of 1892, I reported the Rivers and Harbors Bill of that year, it astonished the country. Why? Because, while it carried only \$20,000,000, it authorized the expenditure of \$27,000,000 more under the continuous work or contract system, and among the projects that were so included in the continuous work system, authorizing the Secretary of War to make contracts, the idea being to have continuous work to reach the desired results, there was written in the bill, for the Mississippi river, \$16,000,000, to be expended in four years' time, \$10,000,000 from Cairo to the Gulf, and \$6,000,000 above Cairo. [Applause.]

Then, for the first time in the history of the government, the appropriation for the lower river was made without any restriction whatever. It was boldly proclaimed upon the floor of Congress, I making the opening speech, that this was a levee bill pure and simple. It meant not only money to continue the works needed for the improvement of the navigation of the river, but it meant authorizing the Mississippi River Commission to expend every dollar of the appropriation if they saw fit for the protection of the valley of the river from inundation. [Great applause.]

When that bill went to the Senate it passed in that shape. Why? Because the combination that had been made included two-thirds of both houses of Congress, and we had votes, if need be, to pass it over the President's veto. But he let it become a law without his signature.

Now, fellow-citizens, what followed that? The Mississippi River Commission met at its office in New York, and Senators White and Gibson of this State, Representative Catchings of Mississippi and myself were there.

We made speeches before the commission, and as the author of the bill, having written the Mississippi river clause with my own hand, I could tell the commission that it was a levee bill; that such was the purpose of Congress in enacting it; that the intention of its enactment had been boldly proclaimed on the floor of both houses of Congress; that it was a new policy of the government in respect to the great river. And the commission allotted \$6,000,000 of the \$10,000,000 for levee construction pure and simple to prevent floods. That money was expended in four years under the contract system, and at the end of that time another great bill was passed, cast on the same lines, and using the same phraseology, appropriating \$9,000,000 for the river from Cairo to the Gulf. So that, fellow-citizens, in two bills \$19,000,000 were appropriated by Congress and used in greater part for levee construction and repair, and in part as a result of those two bills we have today long lines of levees protecting the alluvial valley of the Mississippi river, constituting the finest levee system ever known in any age on any river, and on every mile of it is the stamp of the federal government. [Great applause.]

You will now see that much has been accomplished. It will not do to say that Congress has not risen measurably to the discharge of its duty in respect to the river. It has, but it has not gone far enough, and we are here tonight to ask that it go further. While I am on my feet I wish to do justice to some of the senators and representatives in the Congress of the United States from that section of the country which is most remote from the great river. It has not been a sectional struggle. We have had aid from sources that derived no direct benefit from what was done on the river, and I want right now to say, from an experience of sixteen years in the two houses of Congress, that the Mississippi river owes a debt of gratitude to the distinguished gentleman from the State of Maine who presides over the Commerce Committee of the Senate, Senator William P. Frye. [Applause.] I can't mention all those who stood with us, but I recall that we always had the aid of Senator Matthew Quay of Pennsylvania [applause]; we had the aid of Senator McMillan of Michigan, and we had the aid of many distinguished senators and representatives other than those I have named. And I want to say to my friend from Ohio, who spoke here today, and to his friend to whom he referred as from the valley of the Monongahela river, that while we were taking care of the Great Lakes and the lower Mississippi and the upper Mississippi in the great bill of 1892 and the one that followed it, we took care of every other section of the country, and especially did we always take care of the Ohio river, for which he so eloquently spoke. I want to say to that gentleman that while I was chairman of the River and Harbor Committee I visited the Ohio river and stood at the great Davis Island Dam, a few miles below the junction of the Allegheny and the Monongahela rivers, and that I voted as liberally and as cheerfully for an appropriation for it and for other stretches of the Ohio river that needed improvement as I did for the lower Mississippi river. [Great applause.] And I want to say to his friend from the Monongahela that when, as chairman of the River and Harbor Committee, I went up that river to see its needs, and found it fettered by locks and dams owned by a corporation, that the Committee on Rivers and Harbors decided that that river should be made free and its coal output untaxed,

and this was carried out. [Applause.] I wrote with my own hand the proposition that first went into the River and Harbor Bill committing Congress to the purchase of those locks and dams through which the coal and commerce of that region passed, and Congress did purchase those locks and dams, and enlarged them, and made that river free today. [Great applause.]

There is no question any longer of the method of preventing the floods of the river. That has been settled. We fought the battle over levees and outlets and reservoirs for ten years in Congress. Every known authority, living or dead, was consulted; every investigation that was possible was made. The very Mississippi River Commission itself was appointed by Congress for the purpose of determining what was the best method of treating the great river, and let me say to you that the outlet system was unqualifiedly condemned, the reservoir system was discarded as impracticable, and Congress years ago settled down to the levee system as the only one at all applicable to the great river to reach the results that we desired to attain. [Applause.]

So I take it there is no necessity to enter again into an academic discussion of that kind. We are here as levee men; we are here knowing that the way to harness the great river and prevent it from becoming a terror to those who live in its lower valley is to build the levees high enough and strong enough to withstand any flood. [Applause.] We believe it is the duty of the federal government to do this, though if the truth be told of the fine levee system we have, but a comparatively small portion of it has been at the expense of the federal government. Let me tell you men of the North in this audience that we in Louisiana tax ourselves in two ways for levee construction and repair. We have a State tax that rests on all property throughout the State, whether it be in the alluvial valley or in the hill country of North Louisiana, whence I come. Then we have the alluvial regions of Louisiana subdivided into levee-taxing districts, and we authorize those districts to levy upon all property and all produce within their limits taxes equal to ten mills each year. So that this magnificent line of levees of which I have spoken is, in far greater part, the result of the expenditure of money raised by taxation in the States of Louisiana and Mississippi; and in recent years Arkansas has created levee-taxing districts also.

While this is the case, nevertheless these levees have to be built higher and made stronger. This great river is the property of the national government, and no State can adequately handle it, because, first, the proposition is too vast and costly for any one State; secondly, because the government of the United States alone has authority under the Constitution to say in what way the river shall be handled and regulated, and because, in the third place, the federal government is not circumscribed by State lines. It can treat the river as a whole, whereas no State can treat it except as along the reaches of the river that may be within the State or on its border.

The time has come, fellow-citizens, I repeat, for Congress to recognize its full duty. While it has made the appropriations of which I spoke, nevertheless there has been no statute enacted by Congress that specifically requires the War Department, through the Engineers' Corps, to take charge of the river, to police and protect it and prevent its floods. The time is ripe for the American people to instruct their representatives and senators to do this. The time is coming when we will desire to utilize the forces and elements that are in the waters of the Mississippi river, to build up our low places and renovate our worn-out lands by a system of lateral levees, such as obtain on the Nile, and that can't be done by the States—I mean, regulating the discharge of water in on these basins made by lateral levees. The federal government alone can do that. A State cannot say that an outlet shall be made in the river, because if you grant to the State the right to make one outlet it would have the right to make a thousand, and in that way the navigation of the great river itself might be destroyed. When the river or the country through which it runs was purchased from France, and when the States bordering upon the Lower Mississippi were admitted into the Union, it was upon the condition that the navigation of the river should ever remain open and free to the trade and commerce of the world. [Applause.]

So, fellow-citizens, it is to the federal government that we look, that the American people should look, to take charge of the river; to say what shall be done to it and what shall not be done to it; and I trust that this convention will, in the resolutions that it adopts, speak in no uncertain tones on that line. Let this convention recommend to Congress, let it urge upon Congress, let it demand of Congress that the federal government put forth its hand, and put it forth with such vigor and strength in respect to harnessing the great river that it will no longer be a demon of destruction to those who live in its lower valley. Let it put forth its hand in such a way as to stay its angry waters, and, in reverential imitation of the Divine Teacher of Galilee, say to them, "Peace! Be still!" [Great applause.]

## THE ALLIED QUESTION OF IRRIGATION.

By HON. JAMES WILSON,  
Secretary of Agriculture.

Mr. President and Gentlemen of the Convention:

I thank you very heartily for this kindly greeting of yours. My main object in coming South at this time is to visit the cotton fields and see what damage the boll-weevil is doing. [Applause.] I want also to visit the rice fields and see how far you have got towards growing all the rice we need in the United States, and how soon it will be necessary to help arrange the legislation so that you can ship it abroad and begin to feed the world outside. [Applause.]

Speaking about the Mississippi river induces me to hark back to olden times. Thirty years ago the people of a district in Iowa sent me to Congress to help get the lower Mississippi river jettied, so that freight vessels drawing twenty-six feet could come over your bar, and I see sitting before me an old colleague of mine who was a leader in the House at that time. It looked hopeless for quite a while; the mouth of the Mississippi river seemed to a good many people a good way off; but Governor Stanard had very persuasive ways. [Applause.] He told us that if ocean-going vessels drawing twenty-six feet of water could get up here this would become one of the great export cities of the country with regard to grain, etc., and it has. We got the river jettied, and this became, I think, the second export city of the nation. [Applause.]

I remember being in California once. They had an awkward way up there of

holding you up and asking if you were ready to admit that California was the greatest State in the Union. [Laughter and applause.] I got a little tired of it, and finally one day I was surrounded by a few very nice young fellows representing the press. They said: "What are you doing here?" "Oh, just looking around." "Don't you believe California is the greatest State in the Union?" "Oh, certainly; anybody will admit that." "Well, what are you doing here? You have something in mind." "Well, to be frank with you, I have." "Let us have it," and they drew out their pencils. "Why," I said, "I am hunting this coast up and down to find a man who has as much confidence in its future as I have myself." [Laughter and applause.] Now, gentlemen, I will not apply that to you. I think you well understand the coming greatness of the Gulf ports. Why, a child can begin rolling a barrel away up in Minnesota and can roll it all the way down to the Gulf of Mexico. That is the natural place for our products to come to seek the markets of the world, down hill. There is no doubt about it at all. Just as soon as we cut the Isthmian canal, wherever it may happen to be cut [applause and laughter], prosperity will come to the Gulf ports and your people will not have to go after it. It will be here, and it will be up to you to take care of it. [Applause.]

Now, with regard to the federal government taking care of the levees down here on your great river, I must say that I am exceedingly interested in it. It is a new proposition for me, and you have my sincere sympathy in pushing it. [Applause.] You have now a man in the White House who is broad enough to sympathize in all these great national movements, and you will get as much encouragement from him as you will from any of your own people. [Applause.]

I have been studying the other end of this question, the question of moisture, which is the most prominent in agriculture. Congress took a step forward in the enactment of the great irrigation law, whereby the waters are to be held up and let out on the dry and arid plains of the West and the lands to be sold to actual settlers for the cost of doing the work. That was a great step in advance. When we come to look at it squarely in the face there was no good reason why the people's money should be taken to improve rivers and harbors and nothing should ever go to those people up there, and so it was concluded to be a wise move.

There are several things to be considered with regard to the surplus moisture you get from the great Father of Waters every year. The Weather Bureau is part of my department. We had to tell you within the past year that the Mississippi river would go higher than it had ever gone before, and that you would have to take care of your levees—and you did. Now, why is this river getting higher and higher? You haven't seen the end of it. It is going to call for more and more efforts all the time, because the causes that bring it about are more and more in evidence. The great reservoir of water is the mountain. It is natural for a mountain to hold water until it is full and can't hold any more, and then it comes out in streams through the summer, and the flow of the river is kept up wherever these conditions prevail. The woodman has gone to work on the Atlantic coast and cut through to the Pacific, and he has chopped away the capacity of our mountains for holding water. These are the original reservoirs, but they are comparatively useless. Water falling on them runs off again and makes the biggest Mississippi river you ever saw—and it is going to continue to do that and make you a still bigger river.

You need more help than you imagine. Before the work can be done that must and should be done to counteract this, our mountains should be put in a position to hold water; they should become again the original reservoirs. Go down to the great Appalachian range and look at the conditions over there where the woods have not been touched. Go up there in the mountains, 6000 feet high, and you will find the fir and the balsam up there; you will find the bracken and the moss, and all those other things that hold the water that comes from the clouds until the capacity of the mountain is filled, and these beautiful streams flow out and bless the land. Cut the woods down, and there will be no beautiful streams, no delightful trout streams, and all these waters will come down into the Mississippi river in an inopportune time and call upon you to raise your levees higher. That's what's ahead of you. I don't wonder that you are somewhat tired of the expense of taking care of this great water-course.

Now, in regard to the dam, that is the second thing after the mountain. European countries build dams to hold up water to use in dry times. You have got one of the heaviest rainfalls in the United States, and yet you have great drouths. I inquired into your crops here. Your yield of cane is light, because you had a drouth here. This great river flows past your doors into the Gulf of Mexico, and you have lost one-half of your cane crop because you didn't use any of its waters.

Now, I don't mean to take the position that you can build two or three dams, and that it will interfere very much with the flow of the Mississippi river when it is at its height. Anybody will know that can't be done. The department is giving out literature to the people along these lines, showing them that there is value in what comes from the clouds, and that we cannot much longer neglect to avail ourselves of that value. Water is the carrying system of the soil for the benefit of the land. The plant food that is found in the soil, both mineral and organic, is brought to the roots of the plant by the moisture that is in the soil, and if there is not enough moisture in the soil to carry out that transportation system the crop cannot be made a good one.

But our people will get to understand this water question, and whenever our people begin to study any great problem presented to them they always solve it on a common-sense basis. [Applause.] And they will solve this one on a common-sense basis.

While a few dams would have no appreciable influence on the great river when it gets down here, ten thousand dams might, and the day is coming when agriculture will be so well understood and the effects of drouth will be so thoroughly attended to and prevented that people will hold the waters that originate in the outer reaches of the great river and all its branches and dam after dam will be built upon the basis of eking out the moisture necessary to make a normal crop. That time will come. It will take some time to appreciably affect the Mississippi river by that process, but they have done these things in the Old World, and whatever they do there we cannot only do here, but we can improve on them. [Applause.]

But I recognize the fact that you cannot wait for the education of the people and the reforesting of the mountains. Your ability to pay taxes and raise money to keep your levees going higher and higher may be exhausted before that time. But some day within the United States agriculture will be better understood, and when the rain falls people will regard it as a blessing rather than a nuisance. These waters will be

hoarded up all over the great valley, and then you will find an appreciable difference here and will go to work to lower your levees. [Applause.]

Gentlemen, I have no speech prepared, and have nothing to say. It was very suddenly that I was called upon to say a few words, but such a meeting as this is inspiring. I thank you, and wish you well. [Applause.]

## HISTORY OF THE LEVEE SYSTEM.

By HON. JOSEPH E. RANDELL of Louisiana.

*Mr. President and Gentlemen of the Convention:*

Some two years ago, in the city of Washington, I had the pleasure of listening to a magnificent oration of that prince of orators, Senator John M. Daniel of Virginia. It was on the occasion of the celebration of the one hundredth anniversary of the removal of the capital to that city. The exercises were quite long and everyone had grown tired when Senator Daniel was called on, late in the day, to deliver his address. He made a masterly effort, but when he concluded nearly everyone was worn out. That grand old son of Massachusetts, one of the greatest orators of the nation, Senator George Hoar, had to follow the brilliant Daniel, but when Daniel closed his speech two-thirds of the audience, completely fagged out by the length of the exercises, rose and left the room. The venerable Senator Hoar stood quietly while they were walking out, and then said, in that sweet and pleasant voice of his: "Unhappy is he that cometh after a king." [Applause and laughter.] I feel somewhat like saying that myself tonight. I know that you must be fairly tired out. Our exercises have lasted all day, but I beg of you to be patient with me for a few moments; I will not detain you long."

I feel highly honored at having an opportunity to address this great convention, probably the most important, in its ultimate results, that ever assembled in the Mississippi valley. Heretofore we have had splendid conventions of the Western Waterways Association at Vicksburg, Memphis, Cairo, Davenport and other cities, in which all the streams which empty into the Mississippi and its numerous tributaries were represented, and aid was sought for all of them, but this time it is the parent stream the Father of Waters, which seeks relief, and all its dutiful children from the Alleghenies to the Rockies, together with many relatives and friends from other States, are gathered in its honor and anxious to render it aid. But even as to the Mississippi this convention cannot generalize, for we here are to consider its levee system and the many problems connected therewith. The subject of levees is well worthy our earnest consideration. It has engaged for the past 200 years the best thought of the brightest minds in our valley, and there is wonderful unanimity of opinion among them. It has caused the expenditure of over \$57,000,000 by the riparian States and the national government, and fully \$20,000,000 must be spent to complete and perfect it. When completed it will protect 30,000 square miles, equal to 20,000,000 acres, of the most fertile land on our planet, capable of supporting 12,000,000 to 15,000,000 agriculturists, who will prosper on the richest farms in the world and be heavy consumers of every manufacturing industry in the land.

This great system had its birth nearly two centuries ago when the first levee was constructed in 1717 in front of New Orleans, then a mere village. Since then its growth has been steady, until we now have 1490 miles of levees, extending, in places on both banks of the river, from a point nearly opposite Cairo to many miles below this city, but it must be understood that much of this is deficient in section and height. The levees are not continuous, but there are considerable gaps at several points, such as the mouths of the Red, the Yazoo, the Arkansas, the White and the St. Francis rivers, and through these gaps in seasons of flood the waters pour unrestrained, overflowing a large expanse of some 4870 square miles, which has no protection whatever. The ultimate plan is to close all of them as nearly as possible.

Prior to 1882 the general government gave no material aid to levees except by a grant of swamp lands to the several States in 1850. This grant was of little benefit, as the lands had no value until protected from overflow. In 1882 the first direct allotment of \$1,300,000 was made for levees through the Mississippi River Commission. Since then appropriations, direct or indirect, have been made in every River and Harbor Bill, and the protection of the valley by means of levees has become the well-settled and established policy of the National Congress. The amount expended by the government for levees to the close of the fiscal year ending June 30, 1903, is a fraction over \$17,500,000, and the States and levee districts have spent something over \$40,000,000, making the total cost of our levees about \$57,000,000 to \$58,000,000. The River Commission, in its last published report, estimates that the present levees contain 168,479,726 yards of earth, which is 64 per cent. of the entire system, and that it will require some 94,054,488 to complete them. No price is fixed on this work, but at twenty cents a yard—an outside figure—the additional cost will be less than \$20,000,000. What we need, then, is \$20,000,000, and considering the magnitude of the interests involved this is a very small sum. Nor do we ask all this money from Uncle Sam. We have helped ourselves nobly in the past, and will continue to do so in the future. We have taxed everything in the valley for levees, even the succulent oysters, for which New Orleans is so famous. And here in Louisiana we have a general State tax of one mill for levees which attaches to all property in the State, whether it be in the lowlands or on the highest hills. These taxes average about \$2,000,000 annually. Out of this we must deduct costs of collection, interest on bonds, expense of maintaining existing levees and restoring losses, so that only about \$1,200,000 a year can be spent on new levees. These taxes are a fearful burden, but we are willing to bear them a few years longer until our levees are complete if Uncle Sam will do his part and help as we deserve.

The national government seems committed to a policy of about \$1,000,000 a year for levees. This is not enough. We pay more than that ourselves. We have spent already more than twice as much as Uncle Sam, and as he is, at least, an equal beneficiary, he should bear his full share of the expense. He has admitted the equity of our claim by spending \$17,500,000 on us in the past twenty years, and has shown by the consistency of his appropriations for all these years that it is his intention to perfect our levee system. Then why delay it so long? If it will cost \$20,000,000 to complete it, why not give us two or three millions a year instead of one, and bring this great work to a close in the next six or seven years? Great harm may come from delay, and incalculable good will result from prompt action.

We had last spring one of the greatest floods on record, and though the waters



rose in many places from two to four feet higher than ever before, the levees behaved admirably. In the entire system there were only six crevasses of any importance, and the levee line washed away was only 11,650 feet, or a fraction over two miles. Of the 1490 miles of levees, all held except these two miles, and of the protected area only about 10 per cent. was overflowed. This is certainly a fine showing and one which gives the greatest encouragement to all friends of levees. It demonstrates as never before that the waters can be successfully confined in the channel of the river. In spite of that enormous flood, which was actually 4.6 feet higher just below Memphis than the record-breaking water of 1897, 3.1 feet higher at Memphis, 2.4 feet higher at Greenville and 2.5 feet higher just below Lake Providence, the levees in most places stood the strain successfully, and this, too, in spite of the fact that very few of them have been completed to commission grade of three feet above the water of 1897. If this be the record, and we have only 10 per cent. of loss in the greatest of floods, when only 64 per cent. of earthwork of our levees is in place, what will it be when we have them completed? In my judgment, the mighty Mississippi will then be under perfect control, and will go quietly to the sea, confined to its channel and incapable of harm. Perhaps this view is too optimistic. In discussing this question our great levee authority and eminent citizen, Maj. B. M. Harrod, said recently: "Crevasses will occur as long as trains are derailed or collide, as ships are wrecked, as fireproof buildings are destroyed." And perhaps he is right. Occasional disasters may come, but they will be few and far between. In the main, the valley will be safe, and peace and plenty will reign among the happy millions of our promised land.

Mr. Chairman, the object of this gathering is to induce Congress to make larger appropriations for levees, and in order to bring that about we must convince the nation of our needs and the justice of our claims. For us who live on the banks of the great river and suffer from its floods no argument is necessary. It seems to us our case is so urgent that its bare statement should appeal in thunder tones to our national lawmakers and compel them to grant us relief. We imagine our condition is much more urgent and meritorious than any others, and many of our people find it strange that so little is done for us. To these persons I desire to say that this is a great country, with innumerable rivers and harbors needing government aid, and that each congressman thinks his own rivers and harbors as important as the Mississippi. I have studied this question carefully, and am convinced that we have no just cause for complaint. I believe we have received, at least for the past twenty years, a reasonably fair share of the sums appropriated for rivers and harbors; but, in my opinion, these sums have been totally inadequate not only to our needs on the Mississippi, but to the needs of our country at large, and in future the amount of river and harbor appropriations should be much increased. I do not think these appropriations have kept pace either with our wonderful commercial growth and rapid increase of population or with other great items of national expense. A comparative table, prepared by Hon. Theo. E. Burton and used with much effect in his great speech in Congress on the last River and Harbor Bill, shows the following increase per cent. of rivers and harbors and several other appropriations from 1879 to 1902:

Rivers and Harbors, 1879 to average for 1901 and 1902.....	per cent.	42
Rivers and Harbors, 1879 to average for 1900 and 1901.....	"	152
Postoffice, 1879 to 1902.....	"	272
Army, 1879 to 1902.....	"	352
Navy, 1879 to 1902.....	"	451
Agriculture, 1879 to 1902.....	"	1709
Fortifications, 1879 to 1902.....	"	2577

Thus we see that while the other great appropriation bills are increasing very rapidly—going forward, in fact, by leaps and bounds—that for rivers and harbors is sadly behindhand.

The following table prepared by me shows that the average annual appropriation for ten years ending June 30, 1904, was:

For Rivers and Harbors.....	\$17,865,615 50
For Agriculture.....	3,999,406 50
For Pensions.....	144,025,442 00
For Postoffice.....	109,924,500 50
For Indians.....	8,523,845 50
For Fortifications.....	6,474,899 00
For Army.....	59,645,386 50
For Navy.....	52,148,387 50

It thus appears that the postoffice, which is very close to all of us, received six times as much as rivers and harbors; that the navy, one branch of our war service, received three times as much; the army, three and one-half times; and the navy, army and fortifications combined, which constitute our national defense, six and one-half times as much as we have paid to aid in developing the magnificent commerce which makes us the greatest nation on the globe—that commerce on which the sun never sets; that commerce which rises with the bright orb of day and follows him in his course, keeping time to the music of the spheres and filling the world with the eloquent voices of our drummer-boys, pleading ever in dulcet tones the commercial supremacy of America.

There is no good and valid reason for this. Every dollar spent on the improvement of rivers and harbors cheapens freights, thereby increasing the profits of our farms and factories and aiding in the profitable growth of our internal and foreign commerce. These expenditures are solely in the interest of commerce and ought to appeal strongly to every citizen of the country, as cheap freights certainly enable him to buy cheaper and to sell at a greater profit. I have no means of arriving at the amount of our domestic commerce, which is colossal, but the total of our imports and exports in 1902 were \$2,285,040,389, and for the past five years our exports to foreign countries have exceeded our imports by over \$546,000,000 a year. In other words, the world has bought from us \$546,000,000 per year more than we have bought from it, which gives a splendid trade balance in our favor. This fine showing is largely due to our wonderful transportation facilities by river, lake, rail and ocean, which enables us to compete on terms of vantage with every country in the world. Shall we keep that trade and hold on to our present commanding position? Undoubtedly it is our duty to do so, and there is no surer means than by continuing to better our transportation. The harbors on our sea and Gulf coast must be greatly enlarged to meet the growing size of ocean vessels; the ports on the Great Lakes and the rivers connecting them must be materially deepened and protected from storms; the great Columbia river must be opened by a system of locks and dams at a cost insignificant

compared with the immense shipments from the richest wheat fields on the earth which will float to the Pacific on its bosom; the Ohio, that splendid stream which flows for 900 miles through the garden spot of America, must be given a good boating stage at all seasons, and the same must be done for its great tributaries, the Tennessee and the Cumberland, and innumerable other works of lesser magnitude, but of the greatest importance to their respective localities, must be provided for. All these things require a vast sum of money.

The projects before the Rivers and Harbors Committee when the last bill was adopted, which had been surveyed and reported on by the engineer department, called for an expenditure of over \$300,000,000, and there was merit in every one of these projects, while the majority of them were of great necessity. That bill appropriated nearly \$27,000,000 cash and authorized continuing contracts for about \$37,000,000, making a total of \$64,000,000, and leaving the remaining \$236,000,000 unprovided for. Since then completed surveys increase the amount, and when the next bill is framed we will again be urged to adopt and provide for projects costing in excess of \$300,000,000. How is that to be done if the present niggardly policy is pursued? For the past ten years, as previously shown, our expenditures for rivers and harbors have averaged \$17,865,615 annually, and if that rate is maintained it would require about seventeen years to provide for projects now being urged upon us, without any allowance for maintenance of existing works and nothing for future developments.

This convention should emphasize these facts and should call in stentorian tones for a considerable increase in river and harbor appropriations. No mere pittance will suffice. The bill should carry at least \$40,000,000 in cash and continuing contracts of \$60,000,000 additional. And there should be a bill of this size every two years, which would result in giving us about \$50,000,000 a year. Even that would place us hopelessly behind the postoffice, the army, the navy and the pension department, but with that sum annually we might in a few years be in a fairly good condition.

There has been some suggestion in the press that Congress may not pass a River and Harbor Bill at the coming session. I cannot believe such a thing is seriously contemplated, but this convention should utter its vehement protest and appeal to all true friends of American commerce to prevent such a great disaster as the failure of another River and Harbor Bill.

In conclusion, permit me to say that, in my opinion, the only possible plan for us to secure an increase in our levee appropriations is to secure an increase in the general bill. If we are to have another \$64,000,000, it is out of the question for levees to expect to receive over \$1,000,000 a year. Let us, then, bend all our energies to secure a bill carrying at least \$100,000,000 for rivers and harbors, and if successful in that we can confidently expect \$2,500,000 to \$3,000,000 per year for our levees.

## THE SUBJUGATION OF THE MISSISSIPPI.

By HON. R. S. TAYLOR,

Member of the Mississippi River Commission.

Mr. Chairman and Gentlemen of the Convention:

You are a serious-minded body of men. You have assembled on serious business. I am proposing to make you a serious speech. It will not be inappropriate, therefore, to begin my remarks with a quotation from the sacred Scriptures of a few words contained in the twenty-eighth verse of the first chapter of Genesis: "Be fruitful, and multiply, and replenish the earth and subdue it."

Think of it! This great rolling globe, with its trackless forests, its unsailed seas, its impassable rivers, mountains and deserts, its burning heat, chilling cold, storms, beasts and countless perils on the one hand, and the naked, new-created pigmy, man, on the other. Was his Maker mocking him that He bid him subdue the earth?

How feebly that conquest began; how slow its progress through tedious ages; how at last it spread and rose and swept over land and sea; how glorious has been its march in the recent centuries, and yet how much of its complete fulfillment remains unaccomplished. To subdue the earth, its soil, elements and forces in every land and make all things on it tributary to the happiness of man is still the high destiny of the race. In this vast program of conquest a prominent place belongs to the subjugation of the Mississippi river. I consider, therefore, that as a Mississippi river commissioner I have the warrant, not only of the office which I hold, but of the direct command of Almighty God.

Consider for a moment what the subjugation of this particular part of the earth means. There was a time when an arm of the sea extended from the Gulf of Mexico to the highlands above Cairo, Ill. It received the drainage of all the lands lying between the Alleghenies and the Rocky mountains. The detritus brought down by the rivers which emptied into it—the Tennessee, Cumberland, Ohio, Upper Mississippi, Missouri, St. Francis, Arkansas and Red—filled it up and made the present alluvial basin. That basin contains something over 29,000 square miles of the richest land which nature knows how to compound. It is geological cream skimmed from a million square miles of earth surface. It lies in the path of the great Gulf Stream of the air which flows northeastward from the western borders of the Gulf of Mexico and distributes rain from Texas to Pennsylvania. It extends through nearly 600 miles of latitude and embraces three distinct belts, each adapted to the growth of a great staple—the northern third to corn, the middle third to cotton and the southern third to sugar. There is nowhere else in the world so great area of such fertile land occupied by people so advanced in civilization and so well able to utilize its great possibilities for the good of the world.

In its natural state this whole area of 29,000 square miles was subject to overflow. A great flood reaches more than fifty feet above the low-water plane at Cairo. Passing downward it first pours over the west bank into the basin of the St. Francis, filling there an area of 6700 square miles. Passing Memphis it takes possession of the Yazoo basin on the east, 8600 square miles in area. Then the Tensas basin on the west, 5300 square miles large. Below Red river it spreads out in huge fan shape, covering 10,000 square miles as it passes the final stage of its flow to the sea through the Atchafalaya and Pontchartrain basins. These five great subdivisions, with a number of smaller areas not named, make a grand total of 29,790 square miles. I am speaking now of the overflows which occurred when the valley was in a state of nature, and would occur again if there were no protection against them. They filled the

whole plain, from the hills on the east to the hills on the west. They restored the ancient estuary, ten to twenty miles wide in its upper portions, twenty to sixty miles wide in its central parts, and more than a hundred miles wide at the sea line. The waterway thus formed was so wide and the reservoir capacity of the area was so great that the floods did not reach a great height. When white men took possession of the ground where this city stands they found a high dry bank, rarely overflowed at all, and then only to a shallow depth. The reason was that a large part—probably more than half—of the flood discharge left the channel over the open west bank, which extended for 300 miles or more northward and found its way to the sea across the Atchafalaya country. To protect the small area first occupied was a simple matter. To see why this is so will require a moment's consideration of the Mississippi river's method of land building.

The water which flows in the channel of the Mississippi is at all times charged with sediment in greater or less quantity, consisting of sand and loam, part of which comes from far up the valley and part of which is eroded from the banks along the way, the amount of which is greatest at flood stages. The quantity of such sediment that flowing water can carry depends upon velocity of its flow. A diminution of that velocity compels it to drop part of its load. When the river overflows its bank the obstructions in the way of the escaping water retard its flow and so cause it to deposit sediment as it goes. This diminution of velocity is most effective to cause deposit immediately after the water leaves the channel. As a consequence, the overflowed area is built up most rapidly near the bank, and so the surface of the adjacent country slopes away from the river. At the present time this slope varies from two or three feet to as much as eight or ten in the first mile.

I never recur to this subject without renewed wonder at the vast results which nature accomplishes by the simplest of means. If you set on your table a tumblerful of Mississippi river water fresh from the flowing stream, you will have a deposit in its bottom, a mere film of mud, in a few minutes. In a few hours you will have half a teaspoonful of mud as thick as hotel cream. This whole alluvial valley has been built by the same process. Every spoonful of earth in it has been brought to the place where it rests by flowing water. It ceased to journey toward the sea, because the velocity of the water was insufficient to carry further. Since I began to speak the river has carried through this city enough sediment to load a railroad train with dry soil.

The mills of the gods grind slow, but they grind exceeding small. They have ground the faces of the mountains and filled the gulfs of the sea with the dust thereof, that the sons of men may dwell in gardens and their children eat food.

But the early settlers at New Orleans had no time for such reveries as these. They found bordering the river a strip of dry, fertile land two or three miles wide, sloping gently back toward Lake Pontchartrain. At low water the river's surface was eight or ten feet below the top of the bank; at extreme flood not more than one or two feet above it. It was an easy matter to build a levee sufficient for protection against such overflow. An embankment along the river front three feet high, extending back laterally to the low lands in the rear, was all that was necessary. There was such free discharge for the overflowing water into Lake Pontchartrain that no back levee was necessary. One in front and one on each side, diminishing in height to the swamp, was enough, and these so slight that the total cost of building them was little more than the cost of a fence.

It was within the power of each planter to protect himself and live on his own sunken island in the Mississippi sea. On this small scale, at the spot where we are assembled, the levee system had its beginning nearly 200 years ago. The campaign of subjugation of the Mississippi river had commenced.

As the settlements increased the levees were extended both up and down the stream, and on both sides. Each mile of embankment shut off so much of the overflow previously accustomed to escape over that portion of the bank, and so forced that much water back into the channel. As the embankments crept up stream year after year on both sides of the river, they shut off more and more of the overflow, and so progressively increased the volume going down the channel between them at flood stages. This made it necessary to raise the levees below higher and higher. And so they grew in two directions, up stream in length and up in the air in height.

By the time of the Civil War the levees extended to the head of the Yazoo basin, a short distance below Memphis. They were insufficient in height and strength, and generally too near the bank for safety. During the war they were neglected, of course, and for several years after its close little headway was made toward their restoration. That work had been but partially accomplished when the flood of 1882, the greatest of record, wrought such havoc with them that the people of the valley were overwhelmed in despair. At that opportune moment the United States government appeared on the scene, and with very different men from that which it wore in the same region twenty years before. In place of the horrid front of war, it brought the extended hand of sympathy and help. The Mississippi River Commission, which had been organized in 1879, was then just ready to begin its practical work with an appropriation of \$4,123,000 under its control. By the terms of the law it was required to expend the appropriation primarily and mainly for the improvement of the channel for navigation, but it immediately allotted \$1,000,000 for the repair and building of levees.

This timely aid put hope into the hearts of the people. They took up the work themselves with renewed energy. There was then inaugurated a system of co-operation between the government at Washington and the people of the valley, which has continued to this day with remarkable success and most beneficent results. The commission let it be understood at the outset that so far as was consistent with other considerations, it would help those who helped themselves. Under this stimulus the people rose to the occasion. They taxed themselves to the utmost of their means and borrowed to the limit of their credit. In the twenty years that have passed the government has expended \$17,000,000 on the levees, and the local governments and organizations have expended about \$20,000,000.

The execution of the work has required a co-operation vastly more difficult than the mere mingling of funds. The expenditure of the appropriations made by Congress has been under the direction of officers of the engineer corps, detailed for that purpose by the chief of engineers, who have allowed the plans and recommendations of the commission. These officers have made their own surveys, located their own lines, established their own grades, let their own contracts and superintended their own

work. The lines extend through six different States. Each of these has its own machinery for the raising and expenditure of money on levees. The State engineers make their own surveys, locate their own levees, let their own contracts and superintend their own work. It was a vast and difficult field of co-operation. There was room in it for no end of disagreements, jealousies and misunderstandings. That there has been perfect harmony of action and economical and effective expenditure of money is creditable to all who have had part in the practical work. This fortunate experience has been due in large measure to the high ability and greatness of character of the chief engineers of the States and large levee districts. Among them two yet remain in the posts of usefulness which they have filled for more than twenty years. I need hardly say that I refer to Major H. B. Richardson of Louisiana and Major T. G. Dabney of Mississippi.

During these later years the progress of levee extension has been a repetition on a larger scale of the early history which I have sketched. They have advanced from the lower reaches of the river upward in the same order in which they began. Their upward extension has cut off more and more of the former overflow and so forced more and more water into the channel to be carried between banks to the sea. The necessary result has been to raise the flood level higher and so make it necessary to build the levees higher. Within a few years the system has been approaching a complete continuity except at the spaces necessarily left open at the lower ends of the basins for the exit of surface drainage. It was impossible for those familiar with the subject not to look forward to the passing of the next great flood with extreme anxiety. What would happen? That flood has come and has gone, leaving behind it a record of mingled disaster and success. Upon the whole, it has demonstrated the feasibility and ultimate success of the levee system.

I will give you my reasons for this belief, and this, I beg to say, is the most important part of my message today. The flood of 1903 was not a final test, because the levee system is incomplete; but it was highly instructive as preliminary to a final test. The last great flood prior to the present year was in 1897. It was a little less in magnitude than the last one. In the interim the levees had been greatly improved in strength and extended a little. A large part of the extensions, however, were of deficient grade, particularly in the St. Francis basin. It is a usual practice by the local levee authorities, in their anxiety to cover all the area possible in the construction of new levees, to build them first to a grade sufficient to withstand ordinary floods only, leaving to the future the work of raising them to meet extraordinary floods like those of 1897 and 1903. This is, no doubt, a prudent course where the need is urgent and the resources limited.

The flood of 1897 (less in magnitude than that of 1903) broke the levees in thirty-eight places; that of 1903 in nine places, and of these three were breaks of small importance below the city of New Orleans. The total length of levee destroyed by crevasses in 1903 was about three miles; the length destroyed in 1897 was about eight miles. Neither of these was a large loss out of a total length which existed of 1400 miles.

The most important part of this study, however, relates to the area overflowed and the causes of the overflow. I have told you that the total area liable to overflow is about 29,000 square miles. This includes the whole land surface to the margin of the Gulf. A considerable portion of this is incapable of protection by levees. At the foot of each of the great basins an opening has to be left to permit the escape of surface water from the basin above. In time of flood the water enters these openings and backs up a number of miles over the lower part of the basin. This sort of overflow can be minimized by extending the levees downward as near to the foot of the basin as practicable, and there will ultimately be constructed some extension of the levees in all the basins for this purpose. It is necessary also, in making an estimate of the effectiveness of the present levee system, to exclude from consideration those areas which were overflowed because levees yet to be constructed as part of the system have not yet been built. With these facts in mind, the following figures are highly instructive: The total area overflowed in 1903 was 8000 square miles, leaving 21,000 square miles of the alluvial basin free of inundation. If there had been no levees the whole valley would have been under water from hill to hill. Of the 8000 square miles overflowed, 3000 were overflowed by backwater in the manner that I have described, and 2000 square miles were overflowed because the levees necessary to protect the area have not yet been built. That makes 5000 square miles of overflow which the present levee system was, in the nature of things, ineffective to prevent. This leaves 3000 square miles of overflow which the existing levees would have prevented if there had been no breaks. From what I have said it appears that out of the whole 29,000 square miles in the valley, 3000 square miles were overflowed by backwater. This amount might be reduced somewhat by extensions of the levees, but for my present purpose I may assume that this much overflow is inevitable under the most perfect levee system. That leaves 26,000 square miles which can be protected if the levee system is capable of affording perfect protection, and by that standard it is fair to measure the effectiveness of the present system. I may say, therefore, that out of a total of 26,000 square miles which a perfected levee system would be expected to protect, 3000 square miles were overflowed in 1903. That is less than one-eighth of the exposed area. The existing levees, therefore, protected seven-eighths of the land capable of protection by a completed system carrying the whole flood to the sea without a break. If I call that 12½ per cent., I may say that the existing system accomplished in the flood of 1903 87½ per cent. of success out of a possible 100.

I submit these figures to you, gentlemen, as a demonstration of the magnificent efficiency and success of the levee system.

But this statement does not do full justice to the levees. The value of a police force is not confined to the number of hours in a year during which it is engaged in arresting or chasing down criminals. Its main value consists in the security which its presence affords through all the year. In like manner, the value of a levee system is not confined to the years of great floods. It covers all the years. It consists in the security which it affords from year to year all over the valley against destructive overflow. That sense of security which invites people to the country and makes industry and enterprise possible and life enjoyable is the real benefit which accrues and is to accrue from a levee system. Therefore, to ascertain the true worth of a system, you must spread the protection which it actually affords against a great flood over all the intervening time. The flood of 1903 was the first one of magnitude since 1897, a period of five years.



The history of the past shows that such floods rarely come more frequently than once in five years. I am confident that the levees as they stand today, with the incomplete lines finished up, and without the enlargements and higher grades which are in contemplation, would protect the valley through four years out of five.

If I spread 12½ per cent. over five years, so as to obtain an average, not only of area, but of time, it follows that, taking into account the past five years, the levees have done 97½ per cent. of useful work out of a possible 100.

If anyone has any doubt in his mind of the value of a levee system, I ask him to ponder these figures.

There is another set of facts of the highest significance in regard to the value of a levee system. They are the results which have followed the development of the present system. These results show what occurs in the alluvial valley as confidence is built up in the effectiveness and security of protection from overflow. I have seen property advance all over the alluvial valley, in some places 100 per cent., in some places 200 per cent., in some places 300 per cent., since the people began to entertain a feeling of confidence in security against overflow. This development has reached every branch of business and every interest in life. Cultivated farms, homes, mills, banks, railroads and every adjunct of prosperous and progressive society have multiplied amazingly.

And this is only the beginning of what is possible. Less than half of the tillable land in the valley has been brought under cultivation. It is capable of sustaining a population two, three or four times that which it has at present, and this without counting on large manufacturing cities. Is it to be imagined that such a country, with such resources, where the cotton plant is a small tree and the corn field is a miniature forest, can be given over to ruin by the abandonment of a system which has already produced such magnificent results? It seems to me that there is only one question about it which the people of the valley or the people of the United States can ask, and that is, is there any reason to doubt the possibility of going forward with the work so well begun and so far advanced to final and complete success?

I think I do not underestimate the magnitude of the undertaking. It is appalling to contemplate when you turn your thoughts to that phase of it. I have traveled down the river on the top of a great flood. The water inside of the levees licked the earthen walls that held it to within a few inches of their tops. Outside the fields lay ten or fifteen feet below. Our steamboat seemed to float in air. Between the levees the great river—a mile wide and 100 feet deep—rolled silent, swift, terrible. At such a time I have seen the levee lined with men for miles, topping the embankment with bags of earth or boards set on edge and backed with earth to raise it a few inches higher, or planking the inside of the levee to save it from wave-wash. I have known such a line to extend with scarcely a break for 100 miles. There are few situations in life where human nature is put under such strain. I need not describe it to you, old flood fighters; I could not adequately describe it to anyone else.

I have seen a crevasse almost at the instant of its occurrence, the water rushing through the breach like a cataract and leaping and bounding in great waves across the fields; the negro women fleeing from their cabins, their children and themselves loaded with their simple household effects, and their husbands riding like mad from the fields on mules hurriedly unfastened from the plow—all seeking the safety of the levee; for, curiously enough, the levee is at once the line of danger and the line of safety. When a crevasse occurs the water drops a little inside the levee, and its unbroken length becomes at once a place of refuge.

And yet, with all the suddenness and fury of a crevasse, it is rarely that lives are lost. Indeed, I have never known nor heard of the loss of a life in the immediate path of the rushing water. During a continued overflow persons are drowned by the capsizing of skiffs and the like, but they are rarely caught in the rush of the outburst. It is to be remembered that at such a time the outflow of water quickly fills up the adjacent country and so drowns itself, as I may say. It builds up a lake extending for some miles in all directions, through which there is a slow and quiet flow toward the lower levels.

A little steamboat belonging to the government, and under the charge of the commission, once went through a crevasse. She was engaged in measuring the discharge from the river, and, venturing a little too near, went through like a shot. She was in smooth water in a few minutes and made her way safely across the fields and swamps and bayous of the Atchafalaya basin and home by way of the Gulf.

Life in the alluvial region would hardly be tolerable if these dreadful experiences were frequent or continuous in any one locality. But they are not. During three years out of five they do not occur anywhere, and during the years of greatest disaster they are confined to a few places. At the same time, it must be said that the undertaking to carry the great floods of the Mississippi to the sea between embankments of earth high above the fields and homes of the inhabitants, above school-houses, churches, cities, railroads, factories—everything that enters into the life of a civilized and advancing people, is one fit to frighten the man who, as I said, just looks at that side of it.

It does frighten people. In a recent publication a writer of ability and learning, an engineer of high acquirements, has declared that the levee system is a struggle with forces of nature too mighty for the puny strength of man. He points out that the governing purpose of the river is still, as it has been for ages past, to fill up the alluvial basin; that its overflows are its method of carrying out that purpose; that they distribute over the general surface the material brought down from the upper valley; that that material will continue to come, levees or no levees, and "what," he asks, "is to be done with it?" "It is impossible," he says, "for the river to carry it all to the Gulf; it will be strewn along the way, to the obstruction and damming up of the channel, the elevation of the river bed and the increase of flood heights, necessarily resulting in increase of levee heights until the river will fall over into the fields."

His first deduction from these facts is that we have taken possession of the alluvial valley of the Mississippi prematurely; that it is an unfinished part of the world, not ready for human occupation. The first logical deduction from this view, which, however, he does not state, is that the thing for us to do is to move out and let the river have undisturbed possession for a few million years. The second, which also he does not state, is that a convention of divines—they ought to be thoroughly orthodox, so as to be able to tinker with the Scriptures by authority—ought to be called to give us a new reading of the Book of Genesis. The passage I have quoted should be amended to read: "Subdue the earth, except the Mississippi valley below Cairo; that is reserved until further orders."

This same writer assumes, however, that it is not in the nature of men who live under the Stars and Stripes to give up a fight in that way, and he proceeds to recommend an elaborate system of outlets as the only solution of the problem.

It is not strange that in the face of the tremendous cost, difficulty and hazards involved in the levee system men should look anxiously in all directions for some way out. Nor is it strange that in this search a man's first thought should be outlets to let off the surplus water by some shorter route to the sea. What could be more obvious?

This could be done with immediate advantage in lowering flood heights in some parts of the river. An outlet could be made across the narrow space which separates the river from Lake Pontchartrain above this city, which would immediately lower the flood line through this city a foot or two or more, according to the capacity of the outlet. As many more as you like could be made through the west bank between this city and Red river, to discharge into and across the Atchafalaya basin. The whole river could probably be diverted from its present channel in that way.

But such outflows would be attended by consequences which a prudent man is bound to consider. As I have already stated, the capacity of the water of the Mississippi to carry sediment depends on the velocity of its flow. If you turn it out into a quiet field it quickly drops its load. If we should make an outlet into a shallow place like Lake Pontchartrain it would soon be filled up; bars would appear above the surface; willows would take possession of them; the whole area would become a marsh intersected by tortuous channels. This is what would take place if the outlet were made to allow the discharge of a relatively small part of the whole volume of the river. The obstacles which the outlet would thus speedily build up in its own path would rapidly diminish its capacity and its usefulness.

In the meantime, the river below the outlet, weakened by the reduction of its volume, would have less power to transport sediment than it had before; not merely less total power, but less power relatively to its load. As a result, the deposit of sediment would increase from the outlet to the sea, to the impairment of the discharging capacity of the channel and the gradual restoration of the flood heights which prevailed before the outlet was made. The river has tried this experiment itself. There are many depressions in its banks which mark former channels of outflow, which have been choked up by the luxuriant growth that takes possession of all vacant spots in this valley, so that they have ceased to discharge any considerable volume of water. At the passes it divides into a number of channels which lead out to the Gulf. To that point the river is deep. From that point out the channels are shallow. If all the passes were shut up but one, that would soon become a deep channel. But it would not last. It would proceed to build a bar at its mouth and then cut a multiplicity of channels through it, exactly as it did when it made the present ones.

If these results of subdividing a channel would be remote, so that the relief obtained by an outlet would last a long time, say half a century, and the injury to the channel below postponed for a like time, it would be worth while, in my opinion, to consider the subject. But that is not the case. These actions are rapid. I have known vertical fills of from twenty to thirty feet to be produced in two or three seasons by contraction works in Blum Point and Lake Providence reaches. The consequences which I have described would follow in very few years.

There is a kind of outlet which might be employed on the lower part of the river with advantage, in my opinion. It would be an outlet to take off a carefully-controlled discharge from the very top of an extreme flood, and no more. Its construction would be something like this: We could cut a notch in the bank to a line say one foot below the surface of an extreme flood, such as we had last spring. It should be, I should say, a mile or two miles wide. The bank in front should be securely revetted. The surface of the gap for 1000 feet or more, if necessary, from the margin should be paved with stone. An adequate path for the outflow should be opened to the lowlands, where there would be ample discharge for the water to the sea through bayous or swamps. Such an opening would not be an outlet in the ordinary sense of the word. It would take no water from the river except at extreme high stages, and then from the very top of the stream. I should call it a "spill-way" or "waste-weir," rather than an outlet. Three such spill-ways between Red river and New Orleans would reduce flood heights at this city very materially. They would be followed by the ordinary effect of an ordinary outlet on the channel below them in some degree. They might make necessary some additional work at the mouth of the river to preserve the channel depth there. But these results would develop slowly and could be seen coming in time to prevent them by diminution or closure of the spill-ways. They would be costly not only to construct, but to maintain. The water would flow through them only at intervals—sometimes of a number of years. The pathways leading from them would have to be kept clear by constant attention. The activity of nature's forces in this region is such that they would completely choke up such a path with rank growth in a single season of neglect.

The construction of such spill-ways would be practicable at points below Red river. Above that, hardly so, although one can imagine the closure of Old river at two places and the cutting of a channel down the Tensas, across Old river, between its two dams, into the Atchafalaya basin, as an outlet for spill-ways above the Red.

But all such schemes have no practical value at this time. The outlet theory as usually held, which proposes lateral channels taking off water at ordinary or ordinarily high stages, is a delusion. I deny that it is in accord with the river's own methods and suggestions. If it were, the river would have made for itself a plurality of channels ages ago. It has had time enough and room enough. All the space from bluff to bluff has been its. It has wallowed over that space from side to side again and again. The fact that it has made itself one great channel, and only one, when it could have made a dozen is conclusive evidence that the law of its existence, the expression of its most effective energy, is concentration, not division. Only in the hour of its death, when its life as a river ends in the embrace of the sea, does it break into subdivided channels.

Its overflows mark the limitations of its natural energy. It overtops its banks today because it has not been able in the past to make itself a channel large enough to hold its floods. The levees supply what it has endeavored in vain to create for itself—banks to hold its floods. That they will introduce a great change in its regimen is proved. But they are not a contradiction of the natural tendencies of its own forces; on the contrary, they are in aid of them.

The question what is to become of the sediment which the river has heretofore

deposited in the basins by its overflows is one to be thought of. I have thought of it long, whether with sound conclusions or not I do not know. But what I think is this: Very little of the sediment which enters the channel at Cairo goes to the Gulf by a single journey, or ever will. The river lays down its load and picks it up again over and over; scours in the bends and deposits at the crossings. It gets its freight to destination by many short hauls. The complete restraint of floods will increase the quantity of sediment to be transported in the channel. But the increase in the volume of the water will increase its carrying power in a greater ratio. The amount of sediment received at the upper end will not be increased, but the amount discharged at the lower end will be. The river will have more power than ever before, and will do more work. It will shift its bars down-stream more rapidly, and in doing this it may develop new obstructions to navigation in the lower river and at the jetties. But none of these will be serious beyond practicable remedy.

I have been gravely informed a hundred times by persons who knew nothing about the subject that it was futile to attempt to prevent overflow by levees, because the effect of the concentration of the flood discharge is necessarily to raise the bottom of the river as fast as the tops of the levees are raised. I have often wondered how so many people get hold of that idea who have so few others. But a belief so widely entertained deserves consideration, and the fact, if it be one, is so important that the Mississippi River Commission has taken pains, by the application of all tests within its power, to get at the truth upon the subject.

One of the duties imposed on the commission by the law by which it was created was to make a complete survey of the river. This has been done with the greatest care.

First, the river was fenced in with a series of triangulation lines, by which basal lines were fixed along its banks with the nicest accuracy. Then permanent bench marks were established on lines crossing the river every three miles, two bench marks on each side in each line. These were connected with the triangulation stations. Then soundings were taken on lines crossing the river at intervals of about a quarter of a mile, and numbering about seventy-five soundings to each line. All these were referred to and connected with the bench marks. The results were embodied in maps, and records preserved in the office of the commission. It was thus made possible to reproduce the river in every detail—every bank, bar, elevation and depth, with photographic exactness, at any time in the future. This work was begun at the mouth of the river and completed to Cairo during the years 1881, 1882 and 1883. In 1895 and 1896 a resurvey was made of that part of the river lying between White river and Donaldsonville, La., a distance of 472 miles. Between those points the levees had been, not completely, but comparatively effective in confining the floods during the interim. The work was done by the same methods followed in the first survey, improved in point of exactness as far as possible. These two surveys afforded a basis of comparison, which, for the first time in the history of the Mississippi river, or any other, so far as I know, furnished something approaching exact information on this subject. This comparison disclosed many local changes in the bed of the river. Bars and pools had moved down stream in many places, so that at the point where a bar was found twenty years ago there would be a deep pool, and vice versa. But as a whole there had been little change in the elevation or capacity of the channel, but that little was in the direction of deepening and enlargement, and not in the direction of filling up.

There is another fact which throws light on the question. It is this: A comparison of low-water elevation in reaches of the river which have been leveed for a number of years with efficiency enough to control the floods in substantial degree as they existed before the construction of the levees, and as they have existed since the construction of levees, shows that in those parts of the river the low-water plane has fallen. The evidence of that fact is as follows: No influence of levees has extended to Cairo to affect the low-water elevation there. At points below, where the floods have been confined by levees, something has affected the low-water plane to depress it below that at Cairo. If we take a series of low-water gauge readings from Cairo down, extending over several years before the building of the levees, and plot a line from them representing the average surface of the low water during that time, and then take another series from the same gauge extending over an equal number of years after the building of the levees along that part of the river, and plot an average low-water line by those readings, we find that where the levees were effective to confine the floods within the channel during the second period, the second low-water line says below the first one. That means that in those parts of the river the low-water plane has fallen below its former elevation, and that signifies, it appears to me, that the bed of the river has been depressed to that extent.

I do not know that I can call these facts demonstrations. There are so many things that enter into the behavior of the Mississippi river that it is hard to make two sets of observations in which all the conditions shall be the same. But they are valid arguments. They tend to prove that the increase of the flood discharge within the banks by means of levees does not operate to fill up the bed, but, on the contrary, tends to scour it out.

I have long held this view from purely theoretical considerations, which I will briefly state. It is true that torrential streams flowing down steep slopes into flatter ones tend to fill up their own beds. The higher velocity in the upper reaches of the stream brings down heavy material in the form of pebbles and sand, which the less velocity of the lower reaches is unable to transport. This heavier material, therefore, accumulates in the bed. The Mississippi river below Cairo is not such a stream. Its slopes do diminish downwardly, but very slightly. The levees do not, and will not, increase materially that variation of slope. They will not increase the flood slope as a whole. The floods will start at Cairo with the same, or substantially the same, elevation that they had before, and they will end in the same sea-level. The water will have a higher velocity than it had before, because of its greater depth.

Under conditions existing heretofore it is the lighter rather than the heavier parts of the sediment that go over the bank in great floods. After complete levee closure there will be very little more heavy material to be moved than there was before, and there will be more power to move it. I suppose that, in strict sense, there is a little accumulation of material going on in the bed now, and always has been. In the process of filling up the Mississippi Gulf the fill began at the bottom, and since it reached sea-level the river has risen with the land to its present elevation. But these are geological processes as slow as the erosion of mountains. I do not believe that if

the levees were held intact from now on against all floods any elevation of the bed sufficient to be injurious would take place in hundreds of years.

I am aware of what is said about the Chinese rivers and their levees; of the extent to which they have been elevated, and the crevasses that have occurred and the loss of life that has been caused by them. But I do not know the facts in regard to these rivers which are necessary to make a comparison with the Mississippi and its levees—the soil, slope, depth and other factors that affect the question. But the fact that those levees are, as I suppose, thousands of years old, is enough for me. In planning such works as these I believe in looking ahead, but not too far ahead. I reject outlets for the reason, among others, that such usefulness as they might have would be short-lived, and I think that in such a matter twenty-five years is a short time. I am not afraid of filling up the channel in consequence of levees, because I do not believe that any injurious result in that direction would follow within hundreds of years, and that is far enough for me to look ahead.

## TO OVERCOME LEGISLATIVE DIFFICULTIES.

By HON. JAMES H. BERRY,  
United States Senator from Arkansas.

*Mr. Chairman and Gentlemen of the Convention:*

I would be insensible to all that man holds most dear if I did not greatly appreciate the kind words uttered by your chairman. I came to this convention to receive, and not to give instruction. I came here believing that the people who reside along the banks of the great Mississippi knew better than all others their needs and their demands, and to receive instruction at their hands, and try with all the power that I have to carry out their will. I am not here today to discuss the importance of leveeing the Mississippi river. It is unnecessary that I should. There is no delegate to this convention who does not know that in a financial and commercial way there is no question which can or will come before the Congress of the United States which interests so many people in the South as that of leveeing the Mississippi river.

Of course, my fellow-citizens, I do not wish to be misunderstood in saying that, because there are great questions which may come up affecting our political and social condition which rise high and far above every money consideration whatever. I do not allude to that. But I believe that more benefit will come to more people in the South from the leveeing of the Mississippi river than from any other project that it is possible to bring before the government.

I want to say this also, that I think the great object and purpose of this convention should be that each delegate should constitute himself a committee of one to try and convince the Congress of the United States that in appropriating this money for the leveeing of this great river they are serving the entire United States, and that it is not local to the South alone. I take it that these Southern delegates here today want no special privileges. They do not want this government of ours to give anything to them that they won't concede to our brothers in every State of this Union. In asking the government to give us aid for the leveeing of this great river I do not think that we are asking any special favors or special privileges. While, of course, great benefits will come to the people of the Southern States, yet there is not a State or Territory in this Union that will not be benefited by this appropriation. This is a national affair. This river touches the interests of everybody in every State throughout this land. Therefore we ask nothing except that which I think we are entitled to have. In the distribution of the millions of dollars that are appropriated annually by this great government, of course it is impossible that there could be anything like an equitable distribution in its expenditures throughout the entire nation. I want to say that of all the supply bills and the millions of dollars that go out annually, there is but one bill, and that is the Rivers and Harbors Bill, under which the people of the South get anything that approaches an equitable distribution in the expenses. You take the great Pension Bill, which carries above \$150,000,000. There is but a small proportion of it that comes South. You take the millions that are expended on the construction of naval vessels; you take the supplies for the army and navy. There is very little of that money that comes South. You take the great Sundry Bill, carrying millions of dollars, including the lighthouse service and various matters, and a comparatively small part of it is ever expended in the South. Under the Fortification Bill, under every other bill, it is the same.

Now, gentlemen, understand that we are not complaining of this condition. It is a condition that cannot be avoided. We have no right to complain. But I say that in answer to the proposition that is so often urged before Congress, that this money for the Mississippi river is simply being taken out of the Treasury of the United States for the benefit of the South alone. All that we ask in the distribution of this money and on other questions is fair play. But it has often been said that the South has not been fairly treated, even under the Rivers and Harbors Bill, for reasons of local prejudice. I want to say that that is not true. I have been for twelve years on the Committee on Commerce in the United States Senate, and I have never seen any disposition whatever in a single member of that committee to discriminate against the South. Although Senator Frye and myself seldom agree upon any proposition that comes before the United States Senate, yet no truer friend to the people of the Mississippi valley has ever served on that committee than its chairman, Senator William P. Frye. I remember one time, when there was a great emergency, a million dollars was secured by his efforts, without which it could not have been secured. I was glad to hear that Judge Blanchard made this same statement last night.

Now, my fellow-citizens, I want to say another thing. I think sometimes our own people do not always appreciate the difficulties with which delegates in Congress have to contend.

One of these difficulties was alluded to by our chairman yesterday morning, and that is, that we have in our own midst a number of men who do not believe in the levee system, who contend that the outlet system affords the only true remedy, and who have practically opposed us in the past. For a number of years heretofore, whenever the Rivers and Harbors Bill came up we were confronted by some member of Congress with some editorial from some newspaper saying that the levee system was a failure, and must be abandoned. Then we had to go to work and explain the best we could. That was one of the difficulties that confronted us always. Another difficulty was that senators and members representing the arid States of this Union



always insisted that if we used government money to levee the Mississippi river, that they were equally entitled to have government money to build reservoirs to irrigate their land; or, to put it as they put it, if we had the power to appropriate money to keep water off the land, we had the same power to appropriate to put it on the land. But during the last session of Congress a bill was passed appropriating the entire proceeds of the sales of public lands in the arid States for the building of reservoirs in that section to irrigate those lands. Now those people are silenced, and I hope silenced forever, and I trust the time will never come again when a Tom Carter will arise to kill the Rivers and Harbors Bill, to the great detriment and injury of the people.

There is another difficulty which has always confronted us, and it is the most serious of all—a difficulty which confronts us still. There are a large number of members of Congress in both houses who have always insisted that the Congress of the United States, under the Constitution, had no power to appropriate money to protect private property.

I want to say today that every dollar that has ever been appropriated for levees on the Mississippi river has been appropriated upon the theory that it would benefit navigation, and we never dared to put it on the ground, up to this day, that it would benefit private land-owners, though we knew, of course, that this was incidental to it.

But it seems to me, my fellow-citizens, that if we can appropriate public money to irrigate the lands in the Dakotas, Idaho and Wyoming, that we ought to be able to appropriate it to protect from inundation the land of the Mississippi valley. It occurs to me that whatever may have been the intention of those who made the Constitution of the United States, that this government has so often and in so many cases appropriated public money for private purposes that the question has ceased to be a practical one. As far back as 1848 money was appropriated by the United States government for the relief of the sufferers in Ireland. Only last year, I think, \$1,000,000 was appropriated for the sufferers in the Island of Martinique, a French province. We have appropriated money from time to time to pay for the elimination of diseases among cattle in Illinois and other States. We have appropriated money for every conceivable private purpose of which you can think; and, in addition to that, as our chairman said yesterday, we are appropriating millions of dollars today to hold in subjection 8,000,000 or 10,000,000 people 8000 miles away, under the false idea, I think, that it is necessary in order to civilize and Christianize them. If we can do that, my fellow-citizens, I think we can appropriate money to protect the people of the Mississippi valley, who are already civilized and Christianized. [Applause.]

Now, these are the difficulties that we have had, but there are other difficulties which come in connection with the framing of a Rivers and Harbors Bill.

This appropriation for the Mississippi valley has always been done under the River and Harbors Bill, but while it has its objections in that way, I want to say to this convention that, in my candid judgement, if we ever undertake to cut loose from the Rivers and Harbors Bill and try to pass a separate and direct appropriation to protect the lands along the Mississippi river, to do that, and that only, in my judgement we will fail.

I know what we would like to do, but I think the gentleman from Ohio yesterday gave us some idea of what we have to expect. If we should undertake to pass a bill alone distinct from the Rivers and Harbors Bill we would be met by the citizens of the Ohio valley in Ohio, Pennsylvania, Illinois and Kentucky with the statement that they, too, must have levee protection, and all the farmers living along the banks throughout the upper Missouri would come forward saying: "We cannot permit that bill to pass unless our people are protected along the banks of the Missouri." We would have them from a hundred other rivers in the United States, and if we voted down their amendments they would vote down our bill.

Therefore, whether the idea prevails for government control or whether it does not, that is disconnected with this question. In my candid opinion, the only way to get any appropriation for our levees is to get it under the Rivers and Harbors Bill, because when that bill is once reported there are so many members of Congress interested in so many provisions of it that they have never been able to cut off the appropriation accorded the members for the Mississippi river.

These questions are the ones that have confronted us. As to whether in the future it is best to let the government have control and charge of that great river, that is a question which we will meet, and better meet, when the proper time comes. Today we want to stand united, act as a body and as one mind. Today what we want is to increase the amount of the appropriation for levees for the Mississippi river.

Now that is all-important. If we can get \$2,000,000 more for the leveeing of the Mississippi river for next year it means much to the people of this great valley. We want to go forth from this convention as one man to every locality where the Mississippi river touches and bring to bear every possible legitimate influence and pressure that can be brought to bear upon members of Congress and say if this Congress will give us \$2,000,000 recommended by Mississippi River Commission at once, we will look after the balance of the money hereafter. That is what I call practical. I do not want this convention to go off on a question of government control. I want money for the Mississippi river, and I want it from the general government, and I want it bad, and I want it right now.

Now I think that I have said all that it is necessary to say. In stating these objections and these difficulties I hope no one will misunderstand me to say that it is I who raised these objections. They are objections that we have been compelled, and will be compelled in the future, to answer.

If it be permitted for me to speak of myself, I want to say that I have devoted more time and more labor to trying to secure money for the leveeing of the Mississippi river than for all other questions that I have ever considered since I have been in the Congress of the United States, and my hope has been and is that I may live to see the levees built so high and so strong and so permanent that every foot of land on both sides of the river will be made absolutely secure from overflow.

When I think of these objections that we have got to meet I think that this convention here is going to have a great influence. If we can secure the united co-operation of the States that lie along or even touch the river, to say nothing of its tributaries; if we can get the influence of the delegation from Iowa, from Missouri, from Illinois, from Kentucky, Tennessee, Mississippi, Louisiana and Arkansas—if we can get that, and then my friend from Ohio will bring his Ohio delegation, including Mr. Burton of Cleveland, I promise you we will get the \$2,000,000, as I believe.

I have been greatly gratified at the large attendance at this convention. I have been delighted with the able speeches that have been made by gentlemen of the convention. But while this will have great influence, we will not stop here.

Congress is soon to reassemble. The question whether we will have a Rivers and Harbors Bill is being raised. Therefore we want to unite every influence to overcome those objections and set aside, if it may be, those difficulties. They are great, my fellow-citizens. The difficulties which have confronted the South in the past have been great, and they remain great; but they are not obstacles which cannot be surmounted. The South has met greater difficulties in the past and survived them. We came back in 1865 confronted by desolation everywhere. Our negroes were freed; our farms were destroyed; we were without stock and without farming utensils; we were without money and without credit. Desolation was in every part of the South, and in many places lone chimneys marked the places where had been peaceable and happy homes. My fellow-citizens, we went to work and built up these waste places. If we have not accomplished all that we hoped for, we have shown to the world that difficulties cannot daunt us and misfortune cannot overwhelm us. As it was said, and well said, by our chairman, we have no excuses to offer for the past. We have never seen the day or the hour when we regretted what we had done. We did that which we conceived to be our duty in the sight of God, and we stand by it. But while I say that, I say to those delegates from the Northern States today we have but one country and one flag. It is our country and our flag, and we hold him the truest patriot and the most deserving of his fellow-men who contributes most to the honor and glory of our common country. [Great applause.]

## NEW YORK'S DEPENDENCE UPON THE VALLEY'S PROSPERITY

By HON. CHARLES S. FAIRCHILD.

Ex-Secretary of the United States Treasury Department.

*Mr. Chairman and Gentlemen of the Convention:*

You have heard the case stated amply and ably from many men since you have been in this city. I am sure that all of us who have listened to the arguments and statistics here are profoundly impressed with the greatness of this question and with its vital importance to our great country as a whole. [Applause.] I, as one not familiar with this question when I came here, feel that as a citizen of the United States I have gained great benefit, and I am sure that from this convention will grow out great benefits in an educational way to the country at large.

Just see how our interests are bound together, and why we should contribute one to the other. A week ago I was at my country home, which is in the State of New York, a little east of where you see Lake Ontario on that map. From the hills around my home the waters flow to the St. Lawrence, the Hudson and the Susquehanna. A little west of where I live, and almost in sight of my house, the waters flow to the Mississippi. Therefore, in a sense, we at my home are contributors to your injuries, and so far as we are contributors to your injuries, certainly we are in honor bound to do what we can to repair them. [Great applause.]

We also in our great State of New York and in our great city of New York are immensely dependent upon your prosperity here. We study with great care and with great interest, and sometimes with great anxiety, the condition of your cotton crop. We wish to know every year what your fertile lands are to contribute toward our balance of trade, and when we see a bad condition here in regard to your great crops, we know that it threatens bad conditions to us in regard to all our interests. Therefore we are bound to contribute to you, because you contribute to us. [Applause.]

I am sure that wherever this question is understood, that wherever a man is actuated by unselfish patriotism, he wishes to see this great valley of the Mississippi cared for in the best way possible. [Applause.] What that is is for the experts to say, but whatever the experts agree upon, that we should all stand behind and promote. [Applause.] I was vastly interested and instructed by that luminous paper which Judge Taylor read today, and I felt when listening to him that I was entitled to a little of your gratitude. Some months ago Judge Taylor was very ill, and I had a letter from a newspaper in Indiana telling me that he was very ill, and knowing that I knew Judge Taylor so well and had been associated with him in very important affairs, they asked me to write my opinion of Judge Taylor in order that it might be published with his obituary. [Laughter.] I said: "No, no; I will not give Judge Taylor up yet," and I tell you I believe that through the mind cure I contributed to his recovery [applause], and in doing so I have contributed to the well-being of my country, I am sure. [Applause.]

Now, gentlemen, the federal government, as I have said, is doing much in all directions. It now has taken up the subject of irrigation, giving as an excuse for the expenditure of that amount of money the benefit to the property of the United States which belongs to it specifically, and also giving as a reason the great benefits that will come to the country from the great power of the federal government taking hold and promoting the general interests by apparently promoting some rather local and peculiar interests. But our government did the same thing in other ways long before. It gave up its lands to help build the great transcontinental railway, in order that our whole country might receive benefit therefrom. It has done various other things, and this which it has done and is doing and will be called upon to do with regard to the great Mississippi river stands, in my opinion, on as high a ground, if not higher than any of the other causes which have called for its assistance. [Great applause.]

We are spending, as you have heard, vast sums of money to extend the power and empire of our country over the world; we are going to expend great sums of money in building the Isthmian canal, and yet it seems to me that the benefits that are to come from making perfectly secure and at the disposal of the country this great Mississippi valley outweigh in importance any of the subjects that I have mentioned. [Applause.]

I came here not to advocate plans, not to take part in your deliberations from the point of a person thoroughly understanding the technicalities of this subject. I was in the presence of too much knowledge and too much skill to permit me to do that. I simply came here to express my good-will and hearty sympathy as a citizen of this great country and a person interested in every way in her prosperity and development. [Applause.] That I give to this Mississippi Levee Convention, and I thank you, gentlemen, for having permitted me to be one of so important and so patriotic a body as this which I see before me. [Great applause.]

## NATIONAL SCOPE OF THE MISSISSIPPI PROBLEM.

By RICHARD H. EDMONDS.

*Mr. Chairman and Gentlemen of the Convention:*

The Mississippi river is our greatest national economic problem. Recall the facts which influenced Thomas Jefferson to further the purchase of Louisiana 100 years ago, and we are impressed with the importance of the Mississippi as a factor in making this nation. Had not Jefferson permitted practical statesmanship to override political theory this river might have been the western boundary of the United States, with the territory between it and the Pacific occupied by a people hostile to American institutions and able to levy at the New Orleans outlet burdens even more grievous than those which have been imposed through national neglect in failing to render the navigation of the river to the Gulf safe and sure and to protect millions of persons and hundreds of millions of property from disastrous overflows.

The people of the whole country are inclined to think of the Mississippi river problem as a purely local matter in which only a few Southern States are directly interested and a few Western States indirectly. They are inclined to forget that to the vast coal and iron interests of Pittsburg, to the oil regions of West Virginia and to the grain fields of the far West and Northwest the proper improvement of the Mississippi river is alike of vital concern. This vast river, draining the richest territory of earth, is the nation's heritage, not the South's nor the West's, and its control is the nation's responsibility. That it should ever have been regarded as a State or even as a sectional problem is incomprehensible.

National from the earliest days of the republic, the Mississippi is more national today than ever before, and with the eventual opening of a waterway through the Isthmus it is destined to become still more national. Fifty years ago Matthew F. Maury, the great pioneer of American expansion through the application of science to wind and waves, pathfinder of the seas, prophet of the submarine cable, planner of the weather bureau, firm believer in a great navy and a great commercial marine, standing midway between the time when, as he expressed it, "the free navigation of the Mississippi river was a question of deep and absorbing political interest to us," and the present time, when the safe navigation of the Mississippi is a question of vital economic interest to us, vividly sketched the situation.

"The Mississippi," said he, "takes its rise near the parallel of 50 degrees north latitude, where the climates are suited to the growth of barley, wheat and the hardy cereal grains. The river runs south, crossing parallels of latitude, and changing with every mile its climate and the character or quality of the great agricultural staples which are produced on its banks.

"Having left behind it the regions for peltries, wheat and corn, for hemp and tobacco, for pulse, apples, whiskey, oil and cotton, and having crossed the pastoral lands for hogs, horses and cattle, it reaches, near the latitude of 30 degrees, the northern verge of the sugar-cane.

"Thence expanding into the Gulf, with all these staples upon its bosom, to be exchanged for the produce of other climes and latitudes, it passes on to Key West and the Tortugas, and there at that commercial gateway of the ocean, which opens out upon the Tropic of Cancer, it delivers up to the winds and the waves of the sea for the distant markets the fruits of its teeming soil and multitudinous climes.

"From the Gulf of Mexico all the great commercial markets of the world are down hill. A vessel bound from the Gulf to Europe places herself in the current of the Gulf Stream and drifts along with it at the rate, for part of the way, of 80 to 100 miles a day. If her destination be Rio, or India, or California, her course is the same as far north as the Island of Bermuda.

"And when there shall be established a commercial thoroughfare across the Isthmus the trade winds of the Pacific will place China, India and all the islands of that ocean down hill also from this sea of ours. In that case the whole of Europe must pass by our very doors on the great highway to the markets both of the East and West Indies."

Again and again Maury dwelt upon the Mississippi as a most potent factor in the commerce of the Gulf of Mexico and the Caribbean Sea, which he christened "The Mediterranean of the West," and the necessity for the energies of the United States in commerce to find an outlet across the Isthmus. In a spirit of prophecy he said:

"From all this we are led to the conclusion that the time is rapidly approaching, if it has not already arrived, when the Atlantic and Pacific must join hands across the Isthmus. We have shown that there is no sea in the world which is possessed of such importance as this Southern sea of ours; that with its succession of harvests there is from some one or other of its river basins a crop always on the way to market; that it has for back country a continent at the north and another at the south, and a world both to the east and the west. We have shown how it is contiguous to the two first and convenient to them all. The three great outlets of commerce, the delta of the Mississippi, the mouths of the Hudson and the Amazon, are all within 2000 miles, ten days' sail, of Darien. It is a barrier that separates us from the markets of 600,000,000 people—three-fourths of the population of the earth. Break it down, therefore, and this country is placed midway between Europe and Asia; this sea becomes the center of the world and the focus of the world's commerce. This is a highway that will give vent to commerce, scope to energy and range to enterprise, which in a few years hence will make gay with steam and canvas parts of the ocean that are now unfrequented and almost unknown. Old channels of trade will be broken up and new ones opened. We desire to see our own country the standard-bearer in this great work."

Maury recognized, too, from the standpoint of the practical scientist, what the dwellers in the lower Mississippi valley had a right to expect from the people of the whole country. He said:

"The drowned lands of the Mississippi valley have been ceded to the States in which they lie, upon the condition that those States in reclaiming them will confine the river within its banks.

"The reclamation of these lands would improve the climate of a vast region of

country and make it much more salubrious; it would add vastly to the wealth of those States by giving value to the lands, and greatly increase their commercial resources by bringing immense regions of these vacant lands under cultivation, and it would also vastly improve the navigation of the river.

"An object of so much importance to the health and prosperity of so many people in so many States is certainly worth looking after, and the work, when done, should be done in the most thorough and effective manner.

"Therefore, let us pray Congress for the appointment of an engineer who shall plan the work, and for the enactment of a statute requiring the States to have the work done according to that plan.

"This work is to last for all time. Suppose, therefore, merely for the sake of an illustration, that one of the States above Louisiana should be unfortunate in the adoption of a plan; that after having let the work, accepted it and parted with the lands, experience should prove the plan to be bad or the work to be useless. Louisiana, then, is overflowed in spite of herself, and her works, which we will suppose were really sufficient, are thus in danger of being rendered of no avail.

"The prosperity of the valley is to be greatly affected by this work of embankment, drainage and reclamation, and therefore the best talents that the country affords should be employed to direct it."

These things were said when the total population of the United States was but 23,000,000, the value of our agricultural products but \$1,326,700,000, and the value of our manufactured products \$1,013,340,000. These truths have become more telling with the passing years, and are emphasized by the facts of today. Using, for purposes of uniformity, the figures for the year 1900, although later ones in some lines are available, what is the situation?

The Mississippi drains an area of 1,250,000 square miles, equal to 41 per cent. of the land surface of the United States. Its waters and its tributaries drain the whole of ten and parts of twenty-two States and Territories having a combined land area of 2,107,550 square miles, or more than 70 per cent. of the total of the country. The shortest description of this area may be given by naming the areas not included in it in whole or in part. These are New England, New Jersey, Delaware, South Carolina, Florida, Arizona, Utah, Idaho, California, Nevada, Oregon and Washington, all of which, however, depend or will depend for their prosperity upon the prosperity of the States in touch with the Mississippi.

In the great area embraced within the thirty-two States drained in whole or in part of the Mississippi and its tributaries there is a population of 62,166,000, nearly 82 per cent. of the total population of the country; there are 374,313,897 acres of improved lands, or 90 per cent. of the total improved acreage of the country, and 162,506 miles of railroad, or 83 per cent. of the total. In the last census year this area produced \$4,154,233,789 from agriculture, or 88 per cent. of the total for the whole country, and \$9,850,075,296 in manufactures, or 75 per cent. of the total. The value of its agricultural products was more than three times the value of the total for the United States in 1850, and the value of its manufactured products more than nine times the value for the country in 1850.

It is true that the greater portion of several States, such as New York, Pennsylvania, Maryland, North Carolina, Georgia, Alabama, Texas and Michigan, lie outside the actual drainage basin of the Mississippi, but the fact does not in any way lessen the supreme importance to these States as a whole of this great question. If we would rightly measure the importance of the Mississippi river problem, we must rightly comprehend the magnitude of the interests involved, present and to come. In this vast territory directly concerned in the proper handling of the Mississippi river—a territory of over 2,000,000 square miles of land surface—the total production in the last census year was of wheat 571,701,154 bushels, or 85 per cent. of the total for the whole country; of corn 2,617,409,198 bushels, or 98 per cent. of the total; of cotton 8,591,391 bales, or 90 per cent. of the total; of tobacco 823,247,901 pounds, or 94 per cent. of the total; of hay and forage 71,152,786 tons, or 84 per cent. of the total; of coal 266,150,899 short tons, or 98 per cent. of the total; of iron ore 27,177,729 long tons, or 98 per cent. of the total; of spelter 115,627 short tons, or 94 per cent. of the total; of lead 139,835 short tons, or 60 per cent. of the total, and of petroleum 59,263,220 barrels, or 93 per cent. of the total. This area, with its preponderating power in agriculture and manufactures, produced all the iron ore of the country except the 31,185 tons of Connecticut and Massachusetts, 334,247 tons of New Jersey and a bit of Nevada and Utah; all of the petroleum except the 4,099,484 barrels of California, and all of the coal except the 2,474,003 tons of Washington, 1,147,027 tons of Utah, 171,708 tons of California, 58,864 tons of Oregon and 10 tons of Idaho.

This showing may be summarized in the following table:

	United States.	Mississippi area.	Percentage of total in Mississippi area.
Population.....	75,994,575	62,166,000	82
Area, square miles.....	2,970,230	2,107,550	70
Improved acreage.....	414,498,487	374,313,897	90
Timber acreage.....	32,222,087	23,748,801	73
Railroad mileage.....	191,321	162,506	85
Farm products.....	\$4,717,069,973	\$4,154,233,789	88
Manufactures.....	\$13,910,036,514	\$9,850,075,296	75
Wheat, bushels.....	65,534,252	571,701,154	85
Corn, bushels.....	2,666,324,370	2,617,409,198	98
Cotton, bales.....	9,534,707	8,591,391	90
Tobacco, pounds.....	868,112,865	823,247,901	94
Hay, forage, tons.....	84,010,815	71,152,786	84
Coal, tons.....	269,881,827	266,150,899	98
Iron ore, tons.....	27,533,161	27,177,729	98
Spelter, tons.....	122,886	115,627	94
Lead, tons.....	230,090	139,835	60
Petroleum, barrels.....	63,362,704	59,263,220	93

Such is the exhibit of today of this vast contributor to the wealth of the United States. Is it not sufficient to justify and to insure action by the legislative representatives of the people of the United States for the accomplishment of a task which the States, acting independently or collectively, but without the systematic plan alone possible under federal auspices, can never perform effectively?

The necessity that this work be done promptly and on the most comprehensive plan is pressing today. What will it involve if it be deferred for another fifty years, in which time, if the population of the United States should increase at the rate of the past fifty years, we shall number 244,000,000 people? Or let us look at it from another standpoint.

The six New England States, whose wonderful energy and enterprise are adding vastly to the national wealth year by year, though almost absolutely dependent upon



this Mississippi area for the supplies of raw material for industry and even for food, have an area of 61,973 square miles and a population of 5,592,017, or ninety persons to the square mile. But four States touched by Mississippi waters—Maryland with 120.5 persons to the square mile, New York with 152.6, Ohio with 102.2 and Pennsylvania with 140.1—have a density equal to that of New England. When the Mississippi area equals New England in density, as it inevitably will, this region will have a population of 189,679,500. It would seem a wild dream to anticipate the possibility of this coming about within the next half-century, and yet so marvelous is the growth of our population that even now we shall add in the next ten years a population almost equal to that of the whole South at present. With nearly 80,000,000 inhabitants now, sure to be at least 100,000,000 ten years hence, the mind is staggered as we attempt in sober thought to measure the tremendous advance of a nation which is adding 2,000,000 people to its population every year, rapidly increasing to still greater figures. At the rate of 2,000,000 a year the next half-century would add 100,000,000 to our population, but we know that instead of 2,000,000 we shall soon be adding 3,000,000 and then 4,000,000 a year. Fifty years ago New England, possessing practically none of the natural resources yet to be developed in the Mississippi area, had but forty-four persons to the square mile.

Most of the lumbering operations, and it is to be hoped most of the timber preservation, of the future are to be in the Mississippi area. Most of the mineral development is to occur there. The law of the arts and sciences seeking to get as close as possible to the raw material for industry is to be most thoroughly manifested there. The bulk of the railroad building, as far as extension of mileage is concerned, is to be done there, and it is not unreasonable to believe that the child of today will live to see the time when this area will have, instead of one mile of railroad for every thirteen square miles of territory, at least one mile of railroad for every 4.6 square miles of territory, as Ohio now has. This would give 458,163 miles, or more than twice the present mileage of the whole country. The great proportion of increase in improved acreage is to take place in this territory, with the expansion of artificial irrigation, the enlargement of transportation facilities and the increase in population. With such an increase in population is it not certain that agricultural and manufacturing progress must be proportionately great? If so, then within fifty years this area will annually produce 1,700,000,000 bushels of wheat, 8,000,000,000 bushels of corn, with a total value of all agricultural products of \$12,500,000,000 and of manufactures of \$40,000,000,000, basing these estimates upon the present ratio of production to population, even though we know that production has been steadily increasing more rapidly than population.

These estimates may seem extravagant. But are they? We must bear in mind that human ingenuity in the invention of labor-saving machinery has by no means reached its limit, and that our people have only begun to touch the markets of the world outside our own land. We have had such prodigal gifts from nature in this country that our methods of agriculture are really primitive in comparison with what they will be within a few years with the application of science to farming, with the utilization of wastes, with proper economy in handling mineral riches, with the preservation of timber supplies and with the reclamation for agriculture of millions of acres of rich land now in bog or swamp.

Are these estimates as extravagant as would have seemed predictions made twenty years ago of what has been accomplished in material advancement in that time? Who would have dared in 1880, when our total output of bituminous coal was 42,000,000 tons, to have predicted that in 1903 it would be nearly 300,000,000 tons? Who would have dared to predict at that time that the production of pig-iron of 3,800,000 tons would grow by 1903 to 18,000,000 tons? And yet these things have come about. In 1880 the United States had 50,000,000 inhabitants; we now have 80,000,000, and ten years hence we shall have very nearly, if not quite, 100,000,000. The potentiality of these 100,000,000 will not simply be double that of the 50,000,000 in 1880. In productive power, in the magnitude of financial and commercial operations, each unit in 1913 will represent more than double the capacity of each in 1880. Measured in this way, our population ten years hence will have a potentiality equal to what 200,000,000 would have had in 1880. In the machine age in which we are living progress is so rapid that we can scarcely keep track of it, much less forecast its future. Labor-saving machinery where one man does the work of a hundred, electric energy, electric light, the telephone, the railroad, all of which have reached their present development during less than a quarter of a century, have wrought a revolution in human affairs, and still we seem to be only at the beginning. While they have vastly increased our productive power, they have to a still greater extent increased the demand for labor and the opportunity for employment. As I have just stated, in 1880 the United States made 3,800,000 tons of pig-iron; now we are making at the rate of over 18,000,000 tons. Then we mined 42,000,000 tons of bituminous coal, or three-fourths of a ton per capita; now we are mining at the rate of nearly 300,000,000 tons, or about three and three-fourths tons per capita. Ten years hence, even at the present rate of consumption per capita, we shall be mining 400,000,000 tons a year. But with the accelerating rate of consumption per capita it is quite certain that the production then will be 500,000,000 tons a year, provided railroad facilities can be provided rapidly enough to handle it. In 1880 we had 92,000 miles of railroad, mostly laid with light rails; now we have over 200,000 miles, and largely of heavy rails. In the last seven years alone the railroad traffic of the country has doubled, and even today nearly every railroad is burdened with more freight than it can promptly handle. As late as 1890 the total value of our manufactured products was \$9,000,000,000 and of our agricultural products \$3,000,000,000; now we are turning out \$15,000,000,000 of manufactured products and \$5,000,000,000 of agricultural products a year, or a total of \$20,000,000,000, against \$12,000,000,000 a year then.

What we have done in the development of industry, in domestic and foreign trade, in the saving of by-products by the skill of the expert, is but a beginning. We have simply made a good start in laying the foundation for our industrial structure. We have become a world-power not by virtue of Manila and Santiago, but by virtue of the fact that we have become the leading power in agriculture, in industry and in wealth. Midway between Europe and Asia stands this, the most richly-endowed continent of earth, with a population of 80,000,000 active, virile people unvexed by the arbitrary laws of differing nationalities as in Europe, the foremost in general education, the foremost in wealth, the foremost alike in manufactures and agriculture of all the nations of the world. Man never before conceived of such possibilities as the future holds out to us. Why then should our progress in the next fifty years be less than it has been in the last fifty? And if we only do as well in the coming half-century as

we have done in the last, the figures which I have suggested, enormous as they are, are not beyond the range of possibilities. The improvement of the Mississippi river, looking not alone to the present, but to the future, should be studied in the light of an advancement so great as to stagger the mind as we attempt to forecast it.

Proper leveeing of the Mississippi river will bring into cultivable condition 30,000 square miles of alluvial soil in Arkansas, Mississippi and Louisiana alone, upon which, with the prevailing methods, which are by no means the best, may be raised double the present cotton crop of the whole country, which, with its seed and with cotton at eight cents a pound, would yield \$1,000,000,000 annually. The world is crying for more cotton. England and the Continent are seeking to develop its cultivation in the heart of Africa. Even the president of the New England Cotton Manufacturers' Association at its annual meeting a few weeks ago expressed the hope that cotton production might be increased in other countries in order to increase the world's supply. But here is a region which may be reclaimed by national work large enough to produce twice as much cotton as the whole South now grows—a region which could add a billion dollars a year to the agricultural output of the country. That, however, is but a part of the value of this work. Proper leveeing would not simply mean the adding of 20,000,000 acres or more of the most fertile soil in the world to our national domain; it would mean untold wealth added to the region drained by the Mississippi and its tributaries, and thus to the whole country. Can any man imagine that any country in Europe with such an opportunity before it would hesitate for one moment in embarking upon a plan comprehensive enough to measure up to such unbounded possibilities? When Holland, with its less than 5,000,000 inhabitants, can spend hundreds of millions to reclaim a comparatively small area; when France and Germany and Austria and Russia can likewise spend hundreds of millions in vast enterprises for improvement of waterways; when Manchester can invest \$30,000,000 in a canal in order to become a seaport, and when Mexico and Brazil and the Argentine can undertake harbor improvements which cost for individual ports from \$10,000,000 to \$25,000,000, how can Congress hesitate in assuming the responsibility of building such a levee system as will forever protect the Mississippi valley from overflows, reclaim 20,000,000 acres of land, forever protect the whole Mississippi valley region—from the Alleghany mountains on the east to the Rocky mountains on the west, and from the Lakes on the north to the Gulf on the south—from the possibility of this great river ceasing to be a mighty highway of commerce and a regulator of freight rates more potent than all the railroad commissions ever devised by State or national government.

It may be well to bear in mind that those 30,000 square miles are about the same area as that which supports the 4,500,000 population of Holland with 234 persons to the square mile, and the 6,100,000 population of Belgium with 590 persons to the square mile. When we think of that and remember, too, that England has 536 persons to the square mile, Italy 274, Germany 247, France 192, Switzerland 190 and Austria 162, does the time seem so distant when, with an area more than double that of the combined areas of these European countries, this Mississippi region will have reached the position predicated upon its having but ninety persons to the square mile?

At any rate, its interests are already so stupendous and so intimately related to the interests of the whole land that anything affecting for good or ill the one must in like manner affect the other. The improvement of the Mississippi is a matter vitally affecting all. Its accomplishment upon the lines sketched in the call for this convention means the enhancement, almost inestimable, of American commercial, industrial, agricultural and social prestige. This is, indeed, a national, not a sectional, problem.

This national character of the problem is no novel or radical conception. It was notably emphasized in the following resolutions adopted by a convention held at Memphis, Tenn., in July, 1845:

*"Resolved,* That safe communication between the Gulf of Mexico and the interior, afforded by the navigation of the Mississippi and Ohio rivers and their principal tributaries, is indispensable to the defense of the country in time of war, and essential also to its commerce.

*"Resolved,* That the improvement and preservation of the navigation of those great rivers are objects as strictly national as any other preparation for the defense of the country, and that such improvements are deemed by this convention impracticable by the States or individual enterprise, and call for the appropriation of money for the same by the General Government.

*"Resolved,* That the deepening of the mouth of the Mississippi so as to pass ships of the largest class, cost what it may, is a work worthy of the nation and would greatly promote the general prosperity.

*"Resolved,* That the project of connecting the Mississippi river with the Lakes of the North by a ship canal, and thus with the Atlantic ocean, is a measure worthy of the enlightened consideration of Congress.

*"Resolved,* That millions of acres of the public domain lying on the Mississippi river and its tributaries, now worthless for purposes of cultivation, might be reclaimed by throwing up embankments, so as to prevent overflow, and at this convention recommending such measures as may be deemed expedient to accomplish that object by a grant of said lands or an appropriation of money."

The president of that convention, which contained about 600 delegates from Pennsylvania, Virginia, North Carolina, South Carolina, Mississippi, Louisiana, Texas, Arkansas, Tennessee, Iowa, Kentucky, Missouri, Indiana, Illinois, Alabama and Ohio, was John C. Calhoun of South Carolina. We all recall his pronounced views as to the strict construction of the Constitution and as to the relation of the General Government to internal improvements. That knowledge strengthens the force of his consideration of the Mississippi river as a great inland sea and of the following statement in his opening address at the convention:

"In relation to the great highway of Western commerce at least, the great inland sea of the country—the Mississippi—he did not for a moment question that government was as much obligated to protect, defend and improve it in every particular as it was to conduct these operations on the Atlantic seaboard. It was the genius of our government, and what was to him its beautiful feature, that what individual enterprise could effect alone was to be left to individual enterprise; what a State and individuals could achieve together was left to the joint action of States and individuals; but what neither of these separately or conjointly were able to accomplish, that, and that only, was the province of the Federal Government. He thought this was the case in reference to the Mississippi river."

## THE GREAT CHANNEL OF NATIONAL COMMERCE

By HON. JOHN SHARP WILLIAMS of Mississippi.

*Gentlemen and Fellow-Citizens of the Valley:*

After the descriptive persona uttered by my friend Charlie Scott, I was somewhat surprised to learn that the lame and impotent conclusion was myself. [Laughter.]

My friends, a great poet has said, in language the exact verbiage of which I cannot now recall, that it is a work of great inutility to attempt to paint the lily, to gild refined gold or to add perfume to the violet. After all the discussions which you have heard in this convention, for me to attempt to do anything would be a regilding, a repainting or a reperfuming. [Laughter and applause.] I would either repeat something which had already been said, and repeat it not quite so well as originally uttered, or I should display a woeful lack of information about the technicalities of the situation with which the valley people are confronted.

My friends, a cause in the hands of Charlie Scott, of Tom Catchings and of Mr. Blanchard and their colleagues from those sections here represented is safe without a word added from anybody. [Applause.] On yesterday somebody came to me and wanted me to vote for a proposed resolution which they said these gentlemen had endorsed. I said: "It is useless to read it to me. I wouldn't know any more about its beneficial effects after I had heard it than I do now. If it has been endorsed by those men it is all right. I am willing to follow them upon any subject, from the purchasing of a hamestring to the organization of a celestial choir." [Laughter and applause.]

My friends, neither by immediately previous study nor by present physical condition am I prepared to enter into an elaborate discussion of the problems with which we are confronted, and even if I were prepared and willing to do so, it would be absolutely useless. It would be useless because I am a child of the valley, and no matter what political entanglement, no matter what personal associations may surround me, I am never ashamed of being its child, and I shall never forget my parent nor her interests. [Applause.]

It is therefore only necessary for me, I hope, to say that in every relationship in life, private or public, I am with you, with what you want, identical with you in tradition, in sentiment, in aspiration, in purpose, with you in heart and in soul, in strength, in voice and in vote, wherever I am thrown. [Applause.]

A great many people during this convention have described the Mississippi river; it is the great national sewer; it is the great channel of commerce. My friends, it is for the future a great artery, not only a national, but an international artery, and within less than one mile from where I now stand is the heart from which the artery goes out to the trade channels of the world. The mouth of the Mississippi river is the commercial and industrial center of the world. [Applause.] Look at that map one moment. See how this whole continent converges toward that point. For some time, owing to political reasons or to sectional reasons, commerce has followed eastern and western lines. But, my friends, the natural lines of commerce are north and south and south and north. Organized commerce is but the exchange of products through the instrumentality of a token representative, money, or directly. That exchange of products must be the exchange of diverse products, and diverse products are the result of differences of latitude. So that, in the long run, commerce consists in trading off for one another the products of totally dissimilar climates, and hence it follows that it must run along Northern and Southern lines, or, at any rate, perpendicular to isothermal lines, whether they are strictly northern and southern or not. [Applause.]

There is another consideration. There is no great empire which has ever existed which has not been founded upon the alluvial lands of some great river. When civilization first had its birth, way back yonder in prehistoric times (prehistoric in so far as the written record goes, although not altogether prehistoric as far as concerns hieroglyphics and stone-markings), away back in the days of Babylonia and Assyria, their civilization was founded upon the local situation in the valleys of the Euphrates and the Tigris. Later on, when the civilization of Egypt arose, its basis was the Nile, and the civilization of the greatest branch of the English-speaking people, the peace conservators of the world, will center in another great valley, the deposit of another river, the greatest of them all, the Mississippi. [Applause.]

In connection with this question there are some things that perhaps you would like to hear a strict constructionist democrat express himself about. [Laughter.] By the way, I am very much refreshed now and then to find a question which is non-partisan; but this is one of those questions. [Applause.] But I have heard some discussion as to that, and so I want to call your attention to the fact that the two greatest strict constructionists or the two strictest great constructionists who have ever lived in this country—the great Carolinian, John C. Calhoun, and the great Mississippian, Jefferson Davis—have both united in the opinion that strict construction itself includes the Mississippi river as part of the burden and part of the duty of the national government. [Applause.]

My friends, when the Constitution granted to the federal government the regulation of interstate and foreign commerce it granted the two powers under the same clause and upon exactly the same footing. It would seem curious, therefore, that there has never been any question raised as to the exclusive right, the exclusive power and the exclusive duty of the federal government, in connection with the sea-ports and harbors, the great bearers of foreign commerce, and that yet a question should have been raised in connection with the great rivers, which are the bearers of interstate commerce—both taken away from the States and both vested in the national government under exactly the same clause.

John Marshall decided long ago, to go to another point, that where it is once admitted that the end was federal or national, that every means necessary or proper toward the attainment of that end was likewise federal or national.

Now, then, the Constitution has another clause of great importance to a strict constructionist, to a latitudinarian, or whatever else a man may be, and that is the one vesting exclusive proprietary rights in navigable rivers in the United States government. Why, if I own a disreputable old mule or a breachy hog that will get over the fence and destroy my neighbor's crops, the law holds me responsible for the damage; and when the federal government owns the Mississippi river, so absolutely unmanageable by ordinary power as to have elicited from Sargent Prentiss, the great

Mississippian, a doubt of the Divine Omniscience, then certainly the federal government ought to control it and prevent its ravages. [Applause.] It is nothing but a simple principle of justice which forbids any man, any community or any nation to permit injury to the property of others by its own property. [Applause.]

You will remember that Sargent Prentiss once said that no man had greater reverence or less blasphemy in his heart than he did, and that he had the highest regard for the Divine Omniscience, but there were three things about which he sometimes doubted whether the Almighty Himself knew in advance what they were going to do. One was a petty jury in arriving at a verdict, another was a woman in selecting a husband, and the third was the Mississippi river in the next bend or cut-off that it might choose to make. [Laughter and applause.]

By the way, here I may utter a little practical sense, as far as I am capable of it, for I have sometimes been accused of being absolutely incapable of it. [Laughter.] It seems to me that the line of procedure immediately before you is almost exactly in accord with what was said by my colleague, one of the most useful members of Congress, Mr. Ransdell of Louisiana. [Applause.] The Mississippi valley is a great thing, but every man that comes to Congress has a great thing in his own opinion and in the opinion of his constituents, and which great thing must be attended to, and attended to immediately. I remember myself the time when it seemed to me of the very highest importance that the Buckatunna branch of the — creek, which flows into the — river, should be fixed by the national government. [Laughter.]

My friends, some of these days the great valley between the Alleghenies and the Rockies will hold the political power of this country in the hollow of its hand; but just at present it doesn't. The people of Vermont, the people of New Hampshire, the people from the State of Washington and from the State of Oregon are not going to admit that the lion's share of everything belongs to me and to you. It is therefore necessary always to keep in mind that in order to arrive at an approximation of what you really want, you must let the other fellows have an approximation of what they really want. [Laughter and applause.] You must therefore increase your Rivers and Harbors Bill. [Applause.]

Now, I feel somewhat disposed to make a sort of ad hominem reply to something said by my friend Charlie Scott, who complimented me very highly on yesterday, but whiplashed me just a little while he was doing it. Still, I don't mind a whiplashing from Charlie Scott, because I know it is but the chastisement of an elder brother or of a parent. [Laughter.] I think we might make this proposition to the federal government: That they give us one dollar for rivers and harbors for every two dollars which they devote to the maintenance of the fetish worship in the Philippine Islands. [Applause.] They tell us it will require \$20,000,000 to finish the levee system upon the Mississippi river. It requires now \$140,000,000 a year to maintain the dignity and the world-power of the American Union among a lot of naked little brown men in the Philippines. [Laughter and applause.] I apologize for that utterance, however, because it is totally out of place here. [A voice: "Go ahead; you're right."] Nothing but my fraternal affection for my friend Charlie Scott would have elicited it from me.

My friends, let us consider whether the federal government has the constitutional power to do what we want. I shall not dwell upon that any more. Has it the financial power to do what we want? Undoubtedly. The federal government wastes every year from three to five times as much money as would finish this great work. The work, however, is begun, and it will go on until it is finished, and sitting in my seat there on yesterday, closing my eyes for the time to shut out divergent sights, and turning my ears deaf to everything else, it seemed to me that I saw something away down the vista of the future, and that something was this: The time when the lands in this great valley, richer than those in the Valley of the Nile, richer than the lands of Belgium and of England, richer than the Valley of the Po in Southern Italy, which are worth from \$500 to \$1000 an acre, will be worth their full value in the market to the man who works them and to the man who owns them, and in that picture it seemed to me that the national government had buttressed every concave of the Mississippi river with solid granite. [Applause.] The time will come some day when that will be done, but it is not practical statesmanship now. A man that would go before the next Rivers and Harbors Committee with a granite proposition would be laughed out of Congress as a fool, and deservedly so [laughter], and especially if he wasn't in accord with the idea of the people along Buckatunna creek. [Laughter.] All these things will come in time, however.

My friends, I was sincere when I said I was neither in a physical condition nor prepared in any way to say much on any line. I hope, however, I will never see the time when I am so unprepared mentally and so weak physically as not to remember that I am a child of the valley, and that my first duty is toward my beloved parent. [Great applause.]

## INTERRELATION OF MANY BROAD SUBJECTS.

By HON. GEORGE H. MAXWELL,

Executive Chairman National Irrigation Association.

*Gentlemen of the Convention:*

I wish to say at the start that the subject of the few remarks which I shall make at this late hour of the day is not to be confined to reservoirs. I think that most of us who have passed through the process of evolution which finally resulted in the passage of what is known as the National Irrigation Act, at some time in our experience were under the impression that the construction of reservoirs by the building of dams would largely reduce the floods of the lower Mississippi. I believe that all of us who have given the subject serious thought and study have come to the same conclusion that the result of such a system of reservoirs, if it would have an appreciable effect on the lower Mississippi, would do so at a period so remote from the present that it could not at this time be a solution of the problem of immediate protection from danger of flood in the lower Mississippi valley.

In saying this, however, I do not yield one iota of the importance of the reservoir theory as the plan for the future, and I came here today in the hope and expectation that if a few moments of your time could be accorded to me it might be possible to bring about a better understanding of the relations, not of reservoirs alone, but of the whole irrigation problem and the whole forestry problem to the subject of the levees



on the lower Mississippi; so the text of the address which I suggested I would deliver was not reservoirs, but the relation of forestry and irrigation to the levee problem.

I have been more than repaid for the time I have taken to travel here in sitting and listening to the words of wisdom and drinking at the fountains of knowledge that we have all sat and listened to and drank at as we have heard the addresses delivered in this convention. [Applause.] As I have tried to get this great problem into my mind from your point of view, it seems to me, after all, that the purposes of this assembly may be crystallized into two propositions. They have been stated clearly by Senator Berry, but perhaps I can restate them in a way that will make a little clearer how closely your problem is linked to ours of forestry and irrigation.

As I gather your idea and what you want to accomplish, it is this. Mr. Ransdell outlined it when he showed you that the proportionate increase in the River and Harbor Bill had been 42 per cent., and in that for fortifications 2500 per cent. The position that you and the people of the Mississippi valley and the people of the whole United States want to take is that the levees which will hold back the demon of destruction at your doors are fortifications. You want to get out from behind the stalking ox of the River and Harbor Bill and let this country take up the broad proposition of protecting your homes and your lives from destruction as one which has constitutional justification and warrant outside and independent of the question of commerce. [Applause.]

The irrigation question no longer figures in the River and Harbor Bill, and I am thankful for it. As long as we tried to hook our irrigation car behind the River and Harbor train we were where we didn't belong. The irrigation problem, just like the problem of protection from floods, is a great national problem by itself; but the two have such a close relation that it is no more possible to separate one from the other than it is possible to separate the ray of light that comes from the sun at the point where it strikes the earth.

I will give you a few figures merely as an illustration of why the irrigation problem is broader, many times, than the mere question of reservoirs. You are face to face with a serious proposition in your lower Mississippi valley. I wish that instead of this map which hangs on the wall we had the one which was distributed here the first day of your convention, which showed the entire drainage basin of the great Mississippi river and its tributaries. If you will look at the figures on the canvas before you you will see that 527,000 square miles out of a total of 1,240,000 drained by the Mississippi river are in the drainage district of the Missouri river. Now, I want to ask you this question: If it be a fact that the great rise in the Missouri river—mark you, not a part of it, but the entire rise—can be held off and kept back, so that, instead of coming to you in May, it will come to you in August, isn't that something that you want done? I am looking forward to the future. I want to say that you are wise, unquestionably wise, in framing your resolutions to follow the advice of the great captains who have led you to victory before in what I believe to be the greatest legislative victory that ever was won in this country, in linking the Mississippi river flood problem on to the River and Harbor Bill. I don't believe in swapping horses while crossing a stream. I believe, however, that the inauguration of national irrigation marked a new era in our national history, and that we are now within a few years of the time when forestry and flood protection will be taken up by our national legislature as independent questions, as emergency appropriations, and then, instead of having to wait from ten to twenty years for the money necessary to complete your levee system, you will not have to wait five years for it. [Applause.]

But you are face to face with a serious question. Look at the immense basin that your river drains. Is it not an appalling thing to consider that every drop of waste and surplus water that falls from the clouds in that region must find its way to the sea down your river and through one of its mouths at the Gulf—the water that falls over 1,240,000 square miles, or more than one-third of the entire area of the United States?

Now, what was the condition of the great drainage basin I have referred to when the white man's foot first trod it, when Boone journeyed over the mountains into the impenetrable forests of the Ohio valley, when the great pioneers of the past went over into Illinois through all that vast waste which we have since settled and civilized? There were forests and swamps and sedge grass and prairies, all serving as a vast blanket to hold back the waters that fell and gathered; and it was weeks and months before that massive flood, covering hundreds of thousands of acres, found its way down to the river opposite the place where you now propose to build levees. Go out on the vast plains which drain into the Missouri river, that great basin of 527,000 square miles, where in that long-ago day the grass grew luxuriantly and the mountains were covered with brush and timber. The cattle have beaten that grass down, and the sheep have eaten its roots, so that today you have millions and millions of acres of nothing but dust. The forests have been recklessly and wantonly wasted and burned and destroyed, so that you have hundreds and thousands of acres of mountain ranges where once the cloud water fell and trickled slowly down through the trees and underbrush, forming little rivulets and springs, and finally finding its way down to the great river before you, all ravaged and barren, with its vast burden of water pouring instantly down upon you through the Mississippi. Under the conditions that now confront you, you must provide a way for the drainage of 1,240,000 square miles to come through to the sea.

I think you are unquestionably wise in the plans you have made for today, and next year, and the year after, and the next ten years; but you will not be wise in your day and generation if you do not recognize the fact that if the conditions which have been going on in the last twenty years continue in the future, you are going to see the time when from over this vast area of drained country the water will flow into your river faster than you can raise your banks, and your levee system will in time prove a failure.

I am here today, if for no other purpose, to appeal to you to take time by the forelock. "In time of peace prepare for war." I urge you to join with us in bringing about a national policy which will counteract the influences that have been going on for so many years in that country, and instead of having a rapid run-off of the flood water, increasing from year to year, you will have a decrease from year to year, so that if you will, within the next ten or fifteen years, complete a levee system that will protect you as conditions are today, it will protect you through all the centuries to come, as long as the foot of man shall tread this valley. This is, indeed, well worthy your consideration.

Let us take up the question of irrigation. You have heard what I said about reservoirs. I listened with the utmost interest to what was said by your honorable chairman on that subject, and I want to premise by stating that what I now have to say is not intended in any spirit of controversy or criticism, but only to show you that there is more in this great problem of the irrigation of the arid regions of the Missouri valley than any man in the Mississippi valley has ever thought of.

Take the single State of Montana. The Milk river, the Missouri river and the Yellowstone river join and make one mighty river before it leaves that State. There is water enough passing that line to irrigate 10,000,000 acres of land, and that is not one-eighth of the total area of the State. Mark you, the State of Montana is as large as the Kingdom of Japan, and if it were cultivated by some intensive process, if the waters now wasted were utilized for agriculture, it would support as large a population. But today Montana has 200,000 population and Japan 40,000,000.

It is a mistake to assume that the reservoir system is the irrigation system, because it is but a trifling part of it. The great canals interlacing here and there in every direction are reservoirs, but the greatest of all reservoirs is the land itself, into which the water is poured, to find its way back in the seasons of the year when it is needed.

Your floods don't last long. If you could take off the crest of the flood four or five feet and hold it back thirty or sixty days the danger is past. Now, no one believes that the Missouri causes the floods of the Mississippi, but if you could check and hold back the Missouri and the upper Mississippi and the Ohio, wouldn't it be worth your while? Don't you think you ought to turn your attention to bringing about a national policy to do that? The first thing to be done in that direction is to maintain the forests that grow on and cover the hills and the mountain sides.

I have learned by experience that there is a mighty mass of water in the Mississippi that doesn't come from the Missouri. I started to attend the Trans-Mississippi Congress some three years ago, but the train was stopped at McComb City by an overflow which didn't come from the Mississippi. It came from the east.

Now, do you know that your lumber companies are stripping the mountain sides in Mississippi and Tennessee, and that they are going to make them as bare as the western slopes are today if nothing is done to restore the timber growth? That will intensify the flood conditions here, and it is only one illustration of it. This great forestry problem stretches all around the country, from the State of Washington to Arizona, from Arizona to Texas, from Texas to Louisiana, and thence on up the Atlantic coast to Maine and back to Washington. It is, of all the great problems of this nation, the one crying the loudest for national support, national aid and national solution. There is no such thing as localizing it; and I say to you that you can do nothing to so much nationalize your levee problem as to couple it with the great forestry movement. Have your levees built, get your appropriations, but do it as a part of the great movement which will include appropriations to restore and preserve our forests on the hill sides and on the mountain sides all over this vast area.

Now, as to the Ohio river. This morning I asked a delegate from Pittsburg whether, in his judgment and from his information, it was possible, by a system of reservoirs in the Alleghany mountains, to materially reduce the flood height of the Ohio. He said he believed it was. Now, if that be so, it might well be that, as a matter of flood protection alone, it would not pay to build those reservoirs. It might not have a sufficient appreciable effect on the floods to warrant building the reservoirs for that purpose alone, but don't you realize that the great coming source of power in this country is water-power for the development of electricity. They are transmitting electric power in California today from Yuba county to San Jose, a distance of 100 miles, to light that city, while Los Angeles receives part of its power and light from a source eighty miles distant. There is not a single gorge or canyon created by nature, in the whole basin of the Ohio, where a dam cannot be built which, within the next ten or twenty years, will develop, in the furnishing of power, a sufficient revenue to amply pay for its building. If forestry were looked upon to be, as it is, as important a matter as the army, the navy or any great work of national defense taken care of by the government, and if the national legislature would undertake reforestation and the protection of the existing forests, in a comprehensive and effective way, the water that would be held up and stored along the valley of the Ohio would measurably affect and diminish the floods that come down that river into the Mississippi.

The question of irrigation is getting to be better understood than it was a few years ago. We are getting to understand that the work is worth more than its costs, year by year, dollar by dollar, to the dairymen of Wisconsin and Minnesota as well as to the farmer of Illinois, Iowa and Nebraska, and as soon as the profits derived from irrigation become even better appreciated, it will only be a question of a short time before the farmers of the vast territory which drains into the Mississippi river above Cairo will be utilizing as much of that water as they can hold back for the purposes of irrigation.

These are facts you have not given a thought to, and yet you will find, if you study the proposition, that there is a great field there—not to avoid the necessity for levees, not as a substitute for levees, but to counteract the evil that has been going on for many years in increasing the rapid annual run-off of the waters from this great area, and for which you must always furnish a waste-way here at the mouth of the Mississippi and through this lower valley below Cairo.

As I stand here and tell you all these things, you will say that I am very presumptuous to talk in this way; but in the last three years we have worked out in the national irrigation movement as great a problem as yours, and even greater. Three years ago the idea that the government of the United States would ever deliberately undertake the duty and the obligation of reclaiming the arid region was looked upon as an Utopian dream. Yet today it is an accomplished fact, and I believe that if you would work along the same lines that brought us success you would not only accomplish what I believe to be the first thought in your minds today, but you would have your levees put upon the basis of fortifications, which would enable you to get your appropriations just as rapidly as the work was extended, and that it would also result in the adoption of a great national policy of forestry and irrigation, of which reservoirs are but a small part of a great whole, which would absolutely insure you against any increased exaggeration of the conditions leading to the present rapid run-off of floods with which you have to contend.

Now I am through, with the exception of one or two matters which I desire par-



ticularly to bring to your attention. One of them is that the success of our movement was due purely and solely to the inauguration and carrying on of an educational campaign. We took the ground, which was no more true of the arid regions than it is of your submerged areas, that agriculture was the basis of our national prosperity; that every new farm created added to our national resources, and that the protection of the farms of this country, whether from fire or from drouth or from floods, was just as much a national duty and called for just as strenuous and quick action as the building of battleships to carry our flag upon the sea. [Applause.]

In other words, the next session of Congress is asked to appropriate \$100,000,000 for our navy—and who regrets it? Every patriotic citizen of this nation approves it. And yet, is not the great problem of the protection of our farms from drouth or from flood just as important a proposition as the building up of a navy? If you will ever undertake, in the broad way that we undertook and succeeded in, to strike right at the very nerve center of this great nation, and to touch its great patriotic heart, you will have no trouble in getting for your levees all the money you want just as fast as it can be judiciously spent. [Applause.] And upon that line there is nothing you can do that will give more strength to that movement than to become a part of the great forestry movement, and to become a part of the great irrigation movement. We don't want any more money for irrigation for a long time to come, and all we ever did get we propose to pay back. [Applause.] In other words, every dollar that the government will be asked to expend in the arid regions to reclaim those lands will be paid back by the lands that are reclaimed. Our position is that if the time has not come when the lands will pay it back, then the time has not come to reclaim the lands.

We have \$16,000,000 now in the reclamation fund for construction work. The trouble is not lack of money, but the devilish ingenuity of the Western land-grabber, who is distorting and abusing the present land laws, the Stone and Timber Act, the Desert Land Act and the commutation clause of the Homestead Act; who is boldly attempting to steal and take away the heritage of the people of the nation long before the government can build the works necessary for its reclamation.

We demand something which is of as much interest to you as it is to us, and we ask your help, not only on our own account, but because it is your problem as well as ours. We say that where the government owns the forest lands it should never part with the title to them, but should sell the stumpage to the mill men, disposing of the matured timber as fast as they need it and preserving the young timber until it matures in later years. In this way, instead of entirely using up our timber supply in forty years, we will leave posterity to cut timber from the same lands for thousands of years from now. [Applause.]

If this is to be done, the Timber and Stone Act must be repealed, and that is what we want you to help us bring about.

There is another plank upon which we want you to stand with us. We say that wherever there is a section of 160 acres of land in that arid region upon which water can be put so as to enable a settler to make a living out of it, no one should have that land unless he goes on it and builds a home and stays there for five years—and no man lives who can stand up and justify any other policy. Yet, what is the law today? Under the Desert Land Act he simply puts his foot on the land, makes his filing, does nothing to found a home or settle upon the land, and finally sells it to some of these land-grabbers who are continually seeking to distort our land laws themselves in this way. What is the result? It is the creation of great estates out there in the West where thousands and thousands of acres have become absorbed in one great ranch, and the barbed-wire fence bars out the settler.

We want that law to be repealed, and we want the government to stand upon the proposition that every acre of irrigable land to be reclaimed shall be for the actual settler who will go out and live there and make a home on the land.

We want the commutation clause of the Homestead Act to be repealed. That clause permits the speculators and the stock men to absorb into great ranches for grazing purposes only and prevent settlement on hundreds of thousands of acres by what are called "hobo" filings. Men who have no thought of making a home on the land file on it, and at the end of fourteen months they get a title by paying \$1.25 an acre for the land, and then sell the land to some speculator or stock man.

In his last message to Congress President Roosevelt pointed out the evils of these laws when he said:

In their actual use the desert land law, the timber and stone law and the commutation clause of the homestead law have been so perverted from the intention with which they were enacted as to permit the acquisition of large areas of the public domain for other than actual settlers and the consequent prevention of settlement.

I want to say to you people of the South, who stood so nobly by us when we were asking for the passage of the Irrigation Act, that it would not be on the statute-books of the nation today had it not been for the generous aid of the people of this section. We ask you now to stand with us again; stand with us even against some of the senators and congressmen of the West, who seem willing, unfortunate as it may be, that these laws whose repeal we demand should still disgrace the record of our country's legislation.

One word more, and I am through. I said that it would be wise for you to join with and be a part of the great forestry movement and the great irrigation movement, and I believe it. We are sowing the country with educational literature. We want to attract the attention of every newspaper and every man of this country to our cause. We want them to get into the way of thinking and knowing that all these great internal improvements, whether it be the building of levees on the Mississippi, the construction of reservoirs in Montana, the planting of forests on the sand hills of Nebraska, the reforesting of one section and the preservation of the forests in another—that they are all part of one great problem; that they all alike concern and involve the general welfare of the entire country. We are helping you all we can; we are glad to have the opportunity of extending our aid in exchange for the aid that you have extended to us. But you can do much to help yourselves in the future by coming in and joining us in our work; by becoming members of the National Irrigation Association and of the Trans-Mississippi Commercial Congress and by attending the National Irrigation Congress. This great region should be represented in those bodies, not by a few straggling delegates, but by large State delegations from every Commonwealth in Dixieland.

On my arrival in New Orleans I met a gentleman sent here from El Paso, Mr. Stevenson. He has asked me to present to you the invitation of the people of that city to have the whole Mississippi valley represented at the next Irrigation Congress,

which convenes in El Paso in November, 1904. I say that it is to your advantage that you should go. I was present, and I may say I drew up a large part of the resolutions that were adopted at the last Trans-Mississippi Commercial Congress, which was held in Seattle last August. We planted ourselves there upon a broad platform that we believe every man in this Mississippi valley will stand upon with us, because it includes not only the proposition of forest preservation, not only the question of reservoirs, not only the subject of construction of great canal systems, but it likewise included the matter of the protection by levees of all this country that needs protection, and that at once. It helps you to have your project brought before a great convention of that kind, and endorsed not only by a specific resolution, but by a general declaration of policy as broad as that.

So I say we would like to see you attend these conventions in the future, because you will help yourselves by it. I would like to see at the El Paso Irrigation Congress as many delegates from this section as are present here today.

It is a remarkable thing to observe how interest in this question of irrigation has grown. A few years ago we thought we were in the biggest kind of luck if we had an attendance of delegates at our meeting of from 200 to 400, but in August at Ogden we had 1300 delegates, and at El Paso we expect 2000 and more. The people of this country have waked up to the fact that the cultivation of the arid regions and the protection of the Mississippi valley are great national problems, and no longer sectional issues.

There is one more suggestion that I want to make. I was told here that your sugar crop was short because of the drouth. Now, I crossed your Mississippi river on my way to Arizona last March, when the water was so close to the top of the levees that I didn't see how you kept it from running over. That great highway was full of water, and yet our fields were needing moisture. It seems to me your engineers ought to be able to devise some system under which you could get the use of a part of the immense volume of water that goes to waste in the Mississippi for the irrigation of your fields and their enrichment by irrigating the land with the silt-bearing water from the river.

Out on the Colorado river the government has sent out its surveyors, and they are now engaged in planning for that valley a great system of irrigation works. The Agricultural Department, presided over by Secretary Wilson, who addressed this convention last night, has made a careful investigation, and they find that the actual cash value of the silt as a fertilizer is, I think, \$5 an acre per year.

We know that the fertility of the Nile valley has continued through centuries because the land is constantly rejuvenated by the deposits of silt from the river water. I believe if you go on and complete your levee system as you desire to, and if your levees hold intact, in less than twenty years you will be clamoring for some system which will enable you to get the silt from that water on your lands for the purpose of the fertilization of your farms and plantations.

I want to thank you for the patience with which you have listened to me. I did not intend to talk so long, but I got interested and you seemed to be interested, and I have taken more time than was my first purpose. I thank you very much for your close attention and cordial interest in this subject. [Applause.]

## REPORT OF THE COMMITTEE ON RESOLUTIONS.

The Committee on Resolutions begs leave to submit the following report:

First—After years of actual observation and experience, and supported by the opinions of all engineers, whether from the engineer corps of the army or from civil life, who have been directly connected with the work of levee construction, we desire to affirm that we have the most absolute confidence in the sufficiency of levees when built according to correct standards to protect the Mississippi valley from overflow.

In support of this declaration we beg leave to submit the following facts, which have been fully established: An elaborate and careful investigation, made under the direction of the Mississippi River Commission, wholly disproves the notion, which still prevails to a considerable extent, that the immediate effect of levee construction is to cause the bed of the Mississippi river to rise. If this were true, it would necessarily follow that the levees would need to be continuously strengthened and elevated, and thus all hope of protection would have to be abandoned.

In the years 1881, 1882 and 1883 an elaborate survey was made of the river bed from Cairo to the Passes, a distance of 1063 miles. Four cross-sections to the mile were made, and seventy-five soundings were made to each line. The result of this survey was carefully plotted, recorded and preserved.

In the years 1894, 1895 and 1896, after the lapse of a period of thirteen years, a still more elaborate survey was made of that part of the river bed between the Arkansas river and Donaldsonville, La., a distance of 472 miles.

While local changes in the river bed are necessarily constantly happening by reason of the gradual movement down stream of the bends, and accompanying bars and pools, they of themselves signify nothing. Yet a comparison such as that which has been drawn from the result of the two extensive surveys mentioned would necessarily furnish proof that the bed of the river was rising if such were the truth. So far from the comparison indicating such result from levee construction, it was discovered that there is a general tendency to the establishment of a more uniform channel in depth and width and with greater capacity.

The comparison also brought to light the fact that the crests of the low-water bars, as well as those of the high-water bars, have been lowered.

If we turn to the evidence afforded by the records of the numerous gauges established along the river, which have also been carefully recorded and preserved, we find that the low waters now are several feet lower than they were in the years preceding active levee construction, accompanied by an equal volume of water and an equal depth of channel. This unquestionably shows that the effect of levee construction has been to bring about a gradual depression of the river bed. This effect has been produced within the past few years, for prior to that time there was no such restraint of the flood waters as could leave any impress whatever, one way or the other, upon the river bed.

The notion that the bed of the river is rising has been somewhat revived since the flood of 1903, because of the fact that at certain points the gauge reading showed not only unusually great elevation of the flood height, but irregular elevation. From this it has been deduced by some that at those places where the gauge readings were the



highest there had been, as the result of levee construction, an unusual deposit of silt, thus raising the bed of the river. A simple explanation will destroy this theory:

In 1890, when the levees were by no means continuous and were altogether insufficient to affect the flood plane in any degree, the first thoughtful and scientific observation of the river began. This was because of the fact that the Mississippi River Commission then entered upon the discharge of its duties. It was noted that the rise and fall of the river was very different at different points. It was observed that the greater annual oscillations, which were of about forty-five feet, were to be found at or near the mouths of the tributaries, such as the Ohio, the St. Francis, the Arkansas and the Red rivers. It was also observed that the lesser annual oscillations, which were of about thirty-five feet, were to be found at intermediate points along the fronts of the great basins drained by these tributaries, as, for example, at Fulton, Memphis, Greenville, Lake Providence and St. Joseph.

A careful plotting of the gauge readings at that time exhibited a smooth and regular high-water slope, but an exceedingly irregular low-water slope. This was caused by considerable depression of the river bed at or near the junction with the tributaries of the river, and a considerable elevation of the bed along the fronts of the great basins between them. For this reason it was noted that the rise in high water was much greater where the bed of the river was depressed at or near the points of junction with its tributaries.

It was observed that the discharge at high water at these points, because of these depressions, was something like 1,500,000 cubic feet per second, while along the intervening basin fronts the discharge was several hundred thousand feet less. This difference in discharge, ranging from a quarter to a half-million feet, was because of the escape of water over the river banks along these basin fronts. This escape of water undoubtedly caused the elevation of the bed along these fronts, which was noted, and we feel justified in affirming that when this escape shall have been permanently prevented by the construction of suitable levees, these elevated portions of the river bed will be gradually lowered to conform to the bed at the points of junction with tributaries, thus making a regular low-water slope. When this shall have been accomplished, undoubtedly the lowering of the river bed will steadily go on.

It has also been noted that during the flood of 1903 the heights attained by the flood in excess of those hitherto recorded were greatest at the points along these basin fronts, as, for instance, at Memphis, where the rise was three feet greater than any ever known.

The excess of flood height at the points of depression referred to was nothing like so extreme.

We therefore declare that, in our judgment, there is no warrant whatever for the assertion that the effect of levee construction has been or will be to raise the bed of the river, but, on the contrary, it is our definite conviction that the effect will be to cause a general and considerable lowering of the bed.

#### Efficiency of Levees.

Second—We also desire to express our firm opposition to all schemes for reducing flood heights of the lower river by the construction of reservoirs or so-called outlets. We refer to and indorse fully all that is said upon this subject by the very careful and able report submitted in 1898 by the Commerce Committee of the United States Senate, which is so complete and elaborate as to exhaust the consideration of the question. We will add that all schemes which have ever been proposed for the relief of the river in times of flood by outlets or reservoirs would either prove wholly inefficient or would cost such vast sums and require such constant care and expenditures as to entitle them to no consideration.

Third—While the flood of 1903 was very nearly as great as that of 1897, and while the flood plane was greatly in excess of that of 1897, the protection afforded in 1903 over that of 1897 is so great as to satisfy the minds of all impartial investigators that so far as the test has gone the principle of protection by levee construction has been amply vindicated. In 1903 there were but six crevasses, as against forty-three in 1897. With each recurring flood since levee construction began in earnest the number of crevasses has grown smaller and smaller, and the protection afforded has grown greater and greater. As a result, investments of capital in the Mississippi valley have increased until they are almost fabulous. The low-lying back lands which prior to that date were regarded as valueless are fast being occupied and converted into homes for the benefit of our people. Towns and cities have sprung up in every direction. Railroads now traverse the valley, so that nearly every part of it is now reached by them. All of this affords evidence of the strongest possible conviction on the part of the people that the time is sure to come when they will have absolute protection from the floods of the river.

Theorists may argue against the efficiency of levees, but they do so in vain. The strong common sense of the people responds by rejecting their theories. The work must go on. It cannot now stop. Too much money has been invested in levees to suffer them to be destroyed, and unless they are prosecuted to completion they will be destroyed. The enormous investments made because of them and in reliance upon their completion cannot in good faith be abandoned now to the devastation of the floods. We presume that no man can be found at this stage of the work to suggest that the plan of protection by levees should be abandoned, at least until a full and complete test has shown them to be impracticable.

#### Mississippi River Commission.

Fourth—The following abstract of the report of the Mississippi River Commission, just made, and hardly yet published, gives the very latest opinion of the commission upon the levee question, and is so comprehensive and pertinent that we give it at length, to wit:

"The past flood established, more clearly than has any previous one, both the importance and the practicability of a complete and sufficient levee system. In its present condition, incomplete both as regards extension and dimensions, it gave substantial protection to three-quarters of the alluvial valley and its interests, which under equal flood conditions without levees would have been a lake from twenty to eighty miles wide from Cairo to the Gulf. The improvement made during the past six years has reduced the number of crevasses between Cairo and New Orleans from thirty-eight to six. Of the area overflowed this year, five-eighths was the direct result of back water from the lower ends of the basins and overflow through unbuilt parts of projected lines, and only three-eighths from breaks in the levees, notwithstanding their unfinished condition as regards both grade and section.

"Under these circumstances, the importance of the earliest practicable completion of the work is apparent. If the flood damages of 1903 may be approximately estimated at \$5,000,000, the previous expenditure of that sum in permanent work would have largely if not entirely prevented them. Every year's delay in completion incurs the risk of similar loss. When the system shall have been completed the cost will have been increased by many millions of dollars, and the development of the valley delayed by many years of anxiety and disaster, which could have been saved by continuous work on a scale commensurate with the importance and magnitude of the improvement. The State levee districts realize this. Most of them have anticipated their revenues as far as practicable, and several have now under consideration plans for such increase of resources applicable to the work as will shorten the time of completion. The commission is so impressed with this view of the subject that it considers it for the best interest of the work to now make contracts for levee construction to the extent of \$2,000,000, as provided for in the River and Harbor Act of June 13, 1902, from the amounts to be appropriated for the fiscal years ending June 30, 1905, and June 30, 1906. Furthermore, it suggests that if Congress should think proper to make additional provisions for levee construction during the fiscal years ending June 30, 1905, and June 30, 1906, the sum of \$2,000,000 in addition to the amounts already provided can be judiciously and advantageously expended during each year."

#### Conservation of Commerce.

Fifth—In addition to the protection of the lands of the Mississippi valley from the floods, it is a matter of supreme importance that the mind of the nation should be kept constantly advised of the commercial importance of the Mississippi river as a highway of commerce. The marvelous growth of railroad building within the last quarter of a century has so diverted the attention of the public from the Mississippi river as a means of transportation that it has been to some extent lost sight of. It has remained, however, a constant safeguard against undue rates of transportation and promises in the near future to become once more as active a factor in interstate commerce as it ever has been in the past. This is owing, first, to the almost unparalleled increase in industrial activity throughout the valley, and, second, to the demonstration which has been made in recent years that by means of hydraulic dredges a sufficient channel for low-water navigation can be secured and maintained. We earnestly express the hope that the work of the Mississippi River Commission in this direction be pressed as rapidly as can be properly done, with a view to opening up the great river once more, so that the people may fully enjoy the extraordinary facilities which it is capable of supplying for the cheap and steady exchange of their commodities. Levee construction is undoubtedly essential, even if all thought of reclaiming the fertile lands of the valley should be abandoned, for without levees all river commerce during periods of overflow would necessarily cease.

#### A Grievous Burden.

Sixth—The work of levee construction has been carried on by the co-operation of the United States government through the agency of the Mississippi River Commission with the levee organizations of the several riparian States. Of the amount expended in this work, the government has contributed, in round figures, about one-third. The people have subjected themselves to such heavy taxation in furnishing their contributions until they have already overburdened their resources in this regard. It is the opinion of the residents of the great valley that the difficulties and magnitude of the work and the vast benefits to result from it are such that in common justice the burden should be placed upon the strong shoulders of the federal government, and that the work should be urged to speedy completion. By suitable annual appropriations this can soon be accomplished, thus securing not only safety, but great economy. Therefore:

#### Duty of the Government.

*Resolved*, That, in the judgment of this convention, the protection of the Mississippi valley from floods is of such national importance as not only to justify, but to make it the duty of the general government to undertake it and press it to the speediest possible completion. If, for any reason, the exercise of sole jurisdiction at this time by the general government should not be deemed advisable, then this convention urges most earnestly that Congress make at its approaching session such appropriations as are recommended by the Mississippi River Commission in its recent report.

#### The Comprehensive Plan.

*Resolved further*, That the system of river improvements in the valley of the Mississippi from its headwaters to the Gulf and in the valley of the Ohio and other tributaries, now provided for and those which may hereafter be provided for by Congress under the supervision of the United States engineers, meets our hearty commendation, and should be prosecuted to completion without unnecessary delay.

*Resolved*, That the attention of Congress is invited to the serious disasters which have befallen those residing at or near St. Louis, Kansas City and other localities by reason of the recent great floods, and the Secretary of War is respectfully requested to cause an inquiry to be made with a view to the preparation of suitable plans for the prevention of a recurrence of such injuries.

*Be it resolved*, That the convention of delegates representing the States of the great Mississippi valley from Duluth to the Gulf of Mexico gives its unqualified approval to the movement for the construction of a waterway connecting the Great Lakes at the north with the Mississippi river and the Gulf of Mexico at the south.

We recognize the expenditure of thirty-five (\$35,000,000) dollars by the Sanitary District of Chicago as a practical demonstration in the furtherance of this project. We express the hope that the senators and representatives in Congress from the various States represented in this convention will give their encouragement and assistance to congressional legislation in favor of the completion of the deep waterway, to which the Mississippi valley States have already given their approval, and to which the State of Illinois and the Sanitary District of Chicago are committed as a matter of policy and by great financial expenditures already made.

*Resolved*, That it is the sense of this convention that the work of the Interstate Mississippi River Improvement and Levee Association, under the wise and able guidance of its president, Charles Scott, has been of great and lasting value, and its continuance is a matter of vital importance, and that this organization as it exists, with Charles Scott as its president and J. W. Bryant and W. A. Everman as its secretaries, be continued, and that Charles Scott be authorized to appoint three members from each State as members of the executive committee of said association.

# OPINIONS OF THE PROJECT FROM GOVERNORS, SENATORS, CONGRESSMEN AND OTHERS.

Preliminary to the assembling of the convention, Mr. J. N. Luce, chairman of the Interstate Mississippi River Improvement and Levee Executive Committee, wired the governors of States, United States senators and members of the National House of Representatives as follows: "Will you not assist the Interstate Mississippi River Improvement and Levee Association by wiring us as follows: 'Am in hearty sympathy with the purpose of the Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river, and to maintain such levees at maximum grade, reclaiming and giving protection to the alluvial lands and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channels,' or express your sympathy with our movement in your own language?" In reply Judge Luce received many telegrams, and these, with letters and other messages from governors, senators, congressmen, railroads and business organizations, follow:

## From Governors of the States.

A. H. LONGINO, Jackson, Miss.: Continued absence from the office has delayed the receipt of your letter of recent date, and I offer this as an excuse for the failure to reply to your invitation to join you in the issuance of a proclamation calling attention to the importance of the Levee Convention to be held in New Orleans October 27 next. I presume it is too late now to take such a step, but I beg to assure you of my hearty co-operation with the movement, and to advise you that I have appointed a large number of delegates to attend the convention, and have had a number of replies signifying a purpose to be present. I think you can count on a large and representative delegation from Mississippi.

WINFIELD T. DURBIN, Indianapolis, Ind.: I am heartily in sympathy with the general movement for the improvement of our waterways, and because of the geographical location of Indiana naturally feel a special interest in the improvement of the navigation on the Mississippi river and its tributaries. I am not sufficiently familiar with the subject to intelligently express myself concerning any particular project, but I believe that all money intelligently expended by the national government in the development of plans of internal improvement too broad in scope to appeal to private enterprise will yield ripe dividends to the people.

GEORGE C. PARDEE, Sacramento, Cal.: I received your dispatch requesting me to send a certain dispatch which had reference to Mississippi river improvements and the methods of effecting them. While I am very heartily in favor of liberal government expenditures to preserve and improve the navigability of the country's greatest river, I know too little about the details to undertake to express an opinion concerning the proper engineering policy. In other words, I felt it would be hardly the right thing for me to endorse any particular project or system.

S. R. VANSANT, St. Paul, Minn.: Am in hearty sympathy with the purpose of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levee at maximum grade, reclaiming and giving protection to the alluvial lands and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channel.

JEFF DAVIS, Little Rock, Ark.: Am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grade, reclaiming and giving protection to the alluvial lands and improving the navigation of the Mississippi river, and by confining its waters to the river and deepening the channel.

ALBERT B. CUMMINGS, Des Moines, Iowa: I beg to acknowledge your very kind invitation of the 29th ultimo. Unfortunately, I cannot attend your meeting to be held at New Orleans on October 27. I am in the midst of a campaign and am obliged to speak every day. I will, however, endeavor to secure delegates. With assurances of sympathy in the object of your meeting, and hoping it will be highly successful.

AARON T. BLISS, Lansing, Mich.: Am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention. The protecting of the vast territory drained by the Mississippi and improving the navigation of that stream are objects of national concern and should be the task of the national government. Satisfactory conclusion will be of inestimable value to the nation.

GEORGE K. NASH, Columbus, Ohio: I am in hearty sympathy with the purposes of the Interstate Mississippi River Association at New Orleans, and sincerely hope that the general government will guard the banks of that so as to protect the lands against disastrous overflows and improve the navigation of the river by deepening the channel.

JOHN M. HICKEY, Lincoln, Neb.: Am in sympathy with the purposes of Interstate Mississippi River Levee Convention to be held in New Orleans this week. It is fitting that the national government should afford necessary protection to the property interests which are periodically threatened by the overflow of the Mississippi river.

CHARLES N. HERRIED, Pierre, S. Dak.: Am in hearty sympathy with purposes of the Interstate Mississippi River Levee Convention to secure from the national government aid to levee banks of the Mississippi river, to maintain such levees at maximum grade, reclaiming and giving protection to alluvial lands.

JAMES H. PEABODY, Denver, Col.: My earnest sympathy is in behalf of the proposed levee for the Mississippi river, and the movement inaugurated by your convention should receive the endorsement of our representatives in Congress.

J. C. W. BECKHAM, Frankfort, Ky.: Regret inability to attend convention. This State is vitally interested in all movements looking to improvement of the Mississippi river, and will co-operate with sister Southern States to this end.

SAMUEL W. PENNYPACKER, Harrisburg, Pa.: I am in hearty sympathy with all proper and reasonable efforts to secure aid from the national government for the construction and maintenance of levees along the Mississippi river.

A. M. DOCKERY, Jefferson City, Mo.: My hearty sympathy is with the movement to improve the navigation of the Mississippi, and thus promote the commercial interests of the great valley of the Mississippi.

E. L. BOGGS, secretary to ALBERT B. WHITE, Charleston, W. Va.: Governor White is on the sick list and absent from home. He is in hearty sympathy with the objects of your association.

RICHARD YATES, Springfield, Ill.: Am in hearty sympathy with all purposes of the Interstate Mississippi River Levee Convention now in session at New Orleans.

J. K. TOOLE, Helena, Mont.: Am in hearty sympathy with any practical plan for preventing overflow and destruction of property along the Mississippi river.

S. W. T. LANHAM, Austin, Texas: I sympathize with all sufficient efforts for the improvement of the Mississippi river.

J. M. TERRELL, Atlanta, Ga.: I am in sympathy with your movements, and your telegram expresses my sentiments.

H. G. MCBRIDE, Olympia, Wash.: Am in sympathy with purpose of your convention. Regret I cannot attend.

## From United States Senators.

J. R. BURTON, Kansas: I have delayed answering your kind favor of October 8 until this time, with the hope that I could accept your invitation. I very much desired to be with you at this meeting, but find it impossible. I am in hearty sympathy with everything that will tend towards the improvement of the Mississippi and its larger tributaries for navigation and the prevention of floods. My firm belief is that the most effective means of accomplishing this work is to impound their flood waters in natural and artificial reservoirs. We have tried long enough to control floods; let us see if we cannot prevent them. You will not understand me as saying that the levees should be torn down or that their building should cease, at least for the present; but I would emphasize the very great importance of the government's entering upon the work of holding back the flood waters in the upper reaches of these streams. Let us see if we cannot give the waters where they are needed, to the arid and semi-arid lands higher up, and while we are reclaiming that country, at the same time protect the lowlands of the lower Mississippi from floods. Irrigation and flood prevention are twin ideas, to be developed together.

A. G. FOSTER, Washington: I have been absent from the city for several days and am just in receipt of your telegram with reference to the work of the Interstate Mississippi River Improvement and Levee Convention, etc. I am heartily in favor of the improvement of our rivers and harbors, and am always glad to render every assistance to that end. I have the greatest respect for the senators from Louisiana, and always endeavor to co-operate with them in non-political matters with reference to legislation that is calculated to benefit all of our country or any particular part of it through putting our rivers and harbors, etc., in a better condition. I shall be very glad to take this matter up with your congressional delegation in Washington city.

N. B. SCOTT, West Virginia: I am in favor of the improvement of all our inland waterways, believing, as I do, that by improving them it reduces the cost of transportation of freight and thereby is a benefit to the producing classes of our country. Any improvement that will reclaim the land or protect the farming industries of the country I am heartily in favor of. Your Association certainly will have my hearty co-operation in securing appropriations for the purpose of raising levees on both banks of the Mississippi river in order to retain the waters of the river in their proper bed, and at the same time to deepen the channel, thereby giving better facilities for navigation and transportation.

JOHN C. SPOONER, Wisconsin: I have your favor of the 1st inst., inviting me on behalf of the Interstate Mississippi River Improvement and Levee Association to be present and to deliver an address to the convention to be held in New Orleans October 27. I appreciate the courtesy of this invitation, and would have great pleasure in accepting it, but, to my regret, my engagements are such as to require me to be in Washington on the date mentioned. I hope the convention may be in every way a successful one.

W. A. CLARK, Montana: I have yours of the 29th, and am very much obliged to you for your kind invitation to be present at the convention to be held October 27. I regret very much that it would be impossible for me to go, as I return from here to California, and thence to Montana, and cannot get away in time to be present. I wish you the greatest success in every way. I hope that our efforts in the direction of the storage of water under the new irrigation law may prove of immense value to your people.

WM. J. STONE, Missouri: Am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention at New Orleans as I understand those purposes, which are to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees, reclaiming and giving protection to the alluvial lands and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channel.

JAMES B. MCCREARY, Kentucky: I am in sympathy with the general purposes of the Interstate Mississippi River Levee Convention at New Orleans. I desire to see the alluvial lands protected and the navigation of the Mississippi river improved by confining its waters to the regular channel and deepening the channel, and I hope the national government will give proper assistance.

S. B. ELKINS, West Virginia: Am in sympathy with the purpose of the Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee the banks of the Mississippi river and to maintain the same, so as to protect the alluvial lands and increase the navigable water of the river in the interest of commerce and navigation.

C. W. FULTON, Oregon: Favoring, as I do, improvement of all our rivers by the general government, I am in hearty sympathy with the purposes of your convention, and believe Congress should appropriate sufficient to construct and maintain levees on both banks of the Mississippi adequate to properly protect adjacent territory and improve navigation of the river.

JAMES P. TALIAFERRO, Florida: I am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention in its purposes to obtain liberal appropriations from the government to levee the banks of the Mississippi, not only to improve the navigation of the river, but to protect the alluvial lands along its banks.



**GEORGE C. PERKINS, California:** Am in hearty sympathy with the purpose of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient appropriations as, in opinion of government engineers, will improve navigation of Mississippi river and give protection to alluvial lands.

**CHAUNCEY M. DEPEW, New York:** As I explained to Congressman Ransdell, it will be impossible for me to accept your very kind invitation owing to engagements here which are imperative. I deeply regret this, as I am in thorough accord with your endeavors, and hope to be able to assist the cause in my official capacity.

**PARIS GIBSON, Montana:** I believe the national government should make sufficient appropriations to control the waters of the lower Mississippi by establishing levees and deepening the channel of the river so as to protect the adjacent valuable lands. Am in hearty sympathy with the purposes of the convention.

**W. B. ALLISON, Iowa:** I am in sympathy with all proper means for the improvement of the great river which constitutes the eastern boundary of Iowa, and regret that my engagements are such that it will be impossible for me to be present on the occasion. I thank you and the Association for your kind invitation.

**T. C. PLATT, New York:** Am favorably impressed with the feasibility of your proposition, but am not familiar enough with the question to pledge my support until after I shall have reached Washington and had opportunity to consult with those who are acquainted with the subject.

**M. S. QUAY, Pennsylvania:** I have your letter, and would like to oblige you, but my arrangements are such that it is absolutely impossible for me to be with you on the occasion you name. I am in entire sympathy with the project and will be glad to do whatever I can in its behalf.

**P. J. McCUMBER, North Dakota:** The importance of the Mississippi river as a highway of interstate commerce, also the fact that it is wholly under federal control, justify your efforts to secure all needed legislation to make this great inland route as perfect as possible.

**BOIES PENROSE, Pennsylvania:** I regret exceedingly to advise that, on account of the pressing nature of my engagements as chairman of the Republican State Committee of Pennsylvania, it will not be possible for me to attend, much as I would like to do so.

**WM. P. FRYE, Maine:** As chairman of Committee on Commerce, before which your levee proposition comes, I do not feel at liberty to express any opinion as to its merits. Have always favored large appropriations for improvement of Mississippi river.

**A. J. McLAURIN, Mississippi:** I am in sympathy with any just effort to secure from the national government sufficient aid to levee the Mississippi river and to maintain such levees, confining its waters to the channel.

**JOHN H. MITCHELL, Oregon:** In response to your telegram, I beg to say I am in full sympathy with the purposes of your convention, and you can count on me at the proper time for hearty co-operation and support.

**H. D. MONEY, Mississippi:** I fully sympathize with convention in its efforts for betterment of channel and banks of Mississippi river by national aid.

#### From Representatives in Congress.

**F. A. McLAIN, Mississippi:** I intended to attend the Levee Convention, but as I am limited to a few days at home before my departure for Washington, I find pressure of business matters such as to preclude my attendance, which I regret. I am thoroughly in sympathy with every laudable effort and purpose of the Interstate Mississippi River Improvement and Levee Association to convene in your city tomorrow. I am in favor of securing, if possible, from the national government sufficient aid to have the levees of the Mississippi river and its tributaries improved to that firm and safe standard as will benefit the navigation of the river and fully reclaim and give ample protection to the alluvial lands. I will fully co-operate with you and all others in furthering the improvement of this great river and its tributaries both in and out of Congress. Hope success will crown the efforts of your convention.

**E. J. BOWERS, Mississippi:** On the 3d inst. I wrote you accepting your invitation to attend the Levee Convention to be held in your city on the 27th. Within the last few days I have been notified that an important case in which I am interested professionally has been set for hearing on the 26th inst. at Atlanta, Ga., before the Interstate Commerce Commission. This case will consume at least three days in trial, and I will therefore be denied the pleasure of attending or participating in your deliberations. I am in entire sympathy with the objects of the convention, and regret very much the unavoidable and unforeseen circumstance that calls me away. Permit me to extend my best wishes for a large, harmonious and successful gathering, and to assure you of my hearty co-operation in whatever course of action you may decide to pursue or undertake.

**W. A. RODENBERG, Illinois:** I sincerely regret that my engagements are such that it will be impossible for me to accept. I desire to state, however, that I am in full sympathy with the objects of this convention. We have just recovered from a most disastrous overflow in this part of Illinois, and I fully agree with you that the government should take control of the construction of the levees. I will ask you to be sure to send me a complete copy of the proceedings, as it will be a pleasure to me to co-operate with you in this very meritorious work. I hope that your plans will be comprehensive and take in the entire section of the country that is subject to inundation, as this would insure the active assistance of the members of Congress representing districts along the Mississippi north of Cairo.

**JOHN J. JENKINS, Wisconsin:** I very much appreciate your cordial and earnest invitation to be present with you on the 27th inst., and I assure you that if time permitted I would certainly make the trip. I am very much interested in the development and improvement of the Mississippi river. I once had the honor of serving on the committee in Congress that nominally had charge of the Mississippi river, but that committee never accomplished anything. In addition to my interest in the river, I know that I should meet some gentlemen who I am very anxious and always glad to see, and I know it will be a very enjoyable as well as a beneficial gathering. Whatever I can do in the future towards the improvement of this river will be cheerfully and promptly done.

**H. K. PORTER, Pennsylvania:** Am in hearty sympathy with every movement to secure thorough control of the Mississippi river to prevent, if possible, its overflow, and to give every protection possible to all those residing on and cultivating the lands through which it flows. I deeply regret my inability to come to your convention to

represent Pittsburg Chamber of Commerce, and also at request of the governor of Pennsylvania as representative of the State. The national importance of the improvement of the Mississippi has long been recognized, and to my mind is manifest.

**J. T. ROBINSON, Arkansas:** Express to the Convention of the Interstate Mississippi River Improvement and Levee Association my hearty sympathy with the purposes to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grade, thus improving the navigation of the Mississippi river by confining its waters within the banks, deepening its channel and reclaiming and giving protection to the alluvial lands. Express my regrets that official duties prevent my attending the convention.

**WILLIAM SULZER, New York:** Nothing in the world would give me more pleasure than to be present at your convention, as I take a very deep interest in the Mississippi levee improvement and construction works and have always aided the project by my voice and vote in Congress, but it will be impossible for me to be present, owing to imperative official, professional and political duties in New York city. However, in the future, as in the past, you and all your friends can rely on me to do everything in my power to promote the objects of your Association.

**GEORGE A. LOUD, Michigan:** I beg to assure you that I shall be glad to assist your Association in any way which I can consistently and which lies in my power. I am in hearty sympathy with the purposes of your Association in its efforts to secure from the government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grade, thereby reclaiming and giving protection to the alluvial lands, and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channel.

**JOSEPH M. DIXON, Montana:** I believe in partially protecting the lower Mississippi by conserving and reservoiring the waters at its source and there irrigating the arid lands on the eastern slope of the Rocky mountains. Based on this reciprocity, am heartily in sympathy with the purposes of the Levee Convention to secure national governmental aid sufficient to protect and reclaim the lower Mississippi valley. If headwaters in Montana were properly reservoired, there would be less trouble at your end of the line. Let us kill two birds with one stone.

**R. B. MACON, Arkansas:** I am making my arrangements to be present on the occasion mentioned, and I hope the convention will be a magnificent success in every particular. It is useless for me to say that I am completely wrapped up in the subject that the convention is called to consider. In my judgment, it is of more moment to the people of the Mississippi valley than any other question that can come before the Fifty-eighth Congress. Put me down for any and everything that I can possibly do to advance its interests.

**G. W. CROMER, Indiana:** I was out of the city when your message came to my office, which explains why I did not wire you relative to the improvement of the Mississippi river by government aid by constructing a levee on both banks, and maintaining such levee at maximum grade for the purpose of reclaiming and giving protection to the alluvial lands and improving the navigation of the river. Replying, I desire to say that I will examine into the merits of your suggestion and give them careful consideration.

**R. A. PIERCE, Tennessee:** Am in hearty sympathy with the purposes of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and maintain such levees at maximum grades, reclaiming and giving protection to all overflowed lands, and improving the navigation of the Mississippi by confining the river and deepening the channel, and shall give my vote as member of Congress to secure such legislation.

**J. H. BANKHEAD, Alabama:** I am in hearty sympathy with the purposes of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and maintain such levees at maximum grade, reclaiming and giving protection to the alluvial lands, and improving the navigation of the Mississippi river by confining the waters to the river and deepening the channel.

**A. P. PUJO, Louisiana:** Am in hearty sympathy with the purposes of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grades, reclaiming alluvial lands and improving navigation of the Mississippi river by confining its waters to the river and deepening the channel. Regret that I cannot be with you.

**R. F. BROUSSARD, Louisiana:** Am in hearty sympathy with the purposes of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grade, and giving protection to the alluvial lands and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channel.

**W. M. HOWARD, Georgia:** Am in hearty sympathy with the purposes of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grade, reclaiming and giving protection to the alluvial lands, and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channel.

**B. L. FRENCH, Idaho:** Am in hearty sympathy with the purpose of Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levees at maximum grade, reclaiming and giving protection to the alluvial lands, and improving the navigation of the Mississippi river by confining its waters to the river and deepening the channel.

**SYDNEY J. BOWIE, Alabama:** Am in hearty sympathy with the proposed Interstate Mississippi River Levee Convention at New Orleans to secure from national government sufficient aid to levee both banks of Mississippi river, to maintain such levees at maximum grade, reclaiming and giving protection to the alluvial lands, and improving navigation of Mississippi river by confining its waters to river and deepening the channel.

**H. BURD CASSEL, Pennsylvania:** I am in hearty sympathy with any action of the government which may help to develop the Southern States. Consequently I shall be glad to co-operate with the members of Congress from the South in securing

government aid to levee both banks of the Mississippi river, and will give careful attention to the proposition upon its introduction into Congress at the coming session.

H. A. DINSMORE, Arkansas: Am in hearty sympathy with purposes of the Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to levee both banks of the Mississippi river and to maintain such levee at maximum grade, and improving the navigation of the Mississippi river by confining the waters to the river and deepening the channel.

ED. M. BASSETT, New York: I greatly regret that I could not immediately wire you a response, but I am a new man in Congress; am not well informed on the questions involved, and although I have no doubt that the objects you are working for are meritorious, and even highly praiseworthy, I should much prefer to wait until I am better informed on the facts before expressing an opinion.

GEORGE S. LEGARE, South Carolina: I cannot wire you intelligently, because I am not sufficiently familiar with the subject in question. I am heartily in favor of any improvement which will be of benefit to your or any other section of the country, and while I cannot commit myself without full and careful consideration, I trust I shall be able to assist you.

J. H. DAVIDSON, Wisconsin: I am very much interested in the subject of the improvement of the Mississippi river, and were it possible for me to attend this convention I would gladly do so, as I am very sure I could get much valuable information from its sessions. It will be impossible, however, for me to be present at the convention this year.

GEORGE W. TAYLOR, Alabama: Am in hearty sympathy with purposes of convention to secure national government aid to levee and maintain both banks of Mississippi at maximum grade, reclaiming and protecting lands and improving navigation which you possess, and will join actively in promoting the worthy and national enterprise.

J. H. SHULL, Pennsylvania: I favor the purpose of Interstate Mississippi River Levee Convention at New Orleans to secure national aid to levee the Mississippi river on both sides at maximum grade and assisting in the maintenance thereof; also favor construction of dams at headwaters to utilize and take care of surplus waters.

MINOR WALLACE, Arkansas: If the President calls an extra session of Congress at the time given by the press, I will be pressed for time, particularly if I should have to "walk" to New Orleans. I feel great interest in the object of your convention and would enjoy being with you. Conditions favoring, I shall make the effort to come.

GORDON RUSSELL, Texas: I regard the improvement of the Mississippi river and other great waterways of the country as of great importance, and am in sympathy with every just and timely movement designed to give them a larger influence in the country's commerce, and to reclaim and protect the lands through which they flow.

A. H. JACKSON, Ohio: The Interstate Mississippi Levee Convention has my good wishes for a successful session, and I beg to subscribe my approval of its purposes. Any just and equitable legislative measure on this subject that may come before the Fifty-eighth Congress will have my hearty co-operation and support.

W. R. SMITH, Texas: Am in hearty sympathy with the general purposes of your convention, but am not yet sufficiently posted to pledge myself absolutely to the support of a measure granting the national aid which the convention may demand. Be assured, however, of my most earnest consideration of the matter.

T. E. BURTON, Ohio: I have just returned from an extended absence in Europe, and shall be unable to leave Ohio during this month. I shall hear with interest the result of your deliberations, and trust that you will send me a copy of such resolutions and addresses as are presented at the convention.

C. H. GROSVENOR, Ohio: It will be impossible, by reason of my engagements here, for me to accept your kind invitation, but at the same time I venture to express an earnest hope that your convention may be wisely directed and good results for the great interest you subserve may be accomplished.

F. W. MONDELL, Wyoming: I am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention in your efforts to secure from the national government sufficient aid to build and maintain adequate levees for improving navigation and protection of alluvial lands.

C. H. DICKERMAN, Pennsylvania: I regret that I do not feel like wiring you the message suggested. While I am favorable to proper legislation for the purpose indicated, I do not care to commit myself to any special bill until it comes before the House and has received my careful attention.

THEO. A. BELL, California: Regret I could not attend convention. Am in hearty accord with its objects. Believe federal government should assume and maintain contemplated improvement. What helps one helps all. Country gains much by reclamation incidental to better navigation.

W. C. ADAMSON, Georgia: I regret that, owing to absence from home, I did not see your telegram of the 26th inst. in time to answer while your convention was in session. I assure you of my entire sympathy with your movement, and will co-operate with you to the best of my ability.

RICHARD BARTHOLOTT, Missouri: Am in hearty sympathy with proposition of Levee Convention to secure from government sufficient aid to levee banks of Mississippi, reclaim and protect alluvial lands and improve navigation of river. Shall support necessary legislation in Congress.

C. R. DAVIS, Minnesota: Am in sympathy with purposes of Interstate Mississippi River Levee Convention. I think national government should aid in maintaining levee of sufficient grade to keep river within bounds, and thus protecting adjoining lands and aiding navigation.

JOHN T. HUNT, Missouri: The happiest moment of my life would be to see the proud old Father of Waters rolling resolutely to the sea under restraining influences of solid walls of stone or concrete masonry from its source in the Rocky mountains to the Gulf of Mexico.

AMOS L. ALLEN, Maine: It will not be possible for me to be present October 27 at New Orleans, but I assure you that I favor all reasonable internal improvements, and I hope the great river will be made safe for business and the people along its journey to the Gulf.

JAMES L. SLAYDEN, Texas: I am in hearty sympathy with movement to control water of Mississippi river and for improvement of the channel so as to make it what it ought to be and seems intended by nature to be, the most important artery of commerce in America.

E. DEV. MORRELL, Pennsylvania: I am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention at New Orleans to secure from the national government sufficient aid to improve all of the navigable rivers of the United States.

GEORGE R. PATTERSON, Pennsylvania: Am not familiar enough with details of your project to express a definite opinion, but have always felt inclined to favor legislation that will provide better protection for the people and lands along the Mississippi river.

JOHN W. CASSINGHAM, Ohio: I am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention at New Orleans to secure aid from the national government in the construction of levees on the banks of the Mississippi river.

ARTHUR L. BATES, Pennsylvania: Am in hearty sympathy with purpose of the Interstate Mississippi River Levee Convention to secure government aid to protect banks and maintain levees of said river, thereby improving navigation of said river.

F. E. BROOKS, Colorado: I regret exceedingly that other engagements will prevent my being with you on October 27. The aims of your Association have my heartiest sympathy, and I trust your convention will be a success in every way.

J. W. BABCOCK, Wisconsin: I am in hearty sympathy with the purpose of the Interstate Mississippi River Levee Convention, and will be glad to aid in any proposition that will give security to life and property on the lower Mississippi river.

W. D. VANDIVER, Missouri: I regret very much my inability to accept your invitation and be with you in the Levee Convention on the 27th, but my position is well known, and all the influence I can exert will be in behalf of the proposition.

W. G. BRANTLEY, Georgia: I am in sympathy with the effort to confine waters of the Mississippi to river's channel, whether the same is to be done by deepening, by levees or otherwise. I hope for the successful meeting of your Association.

J. N. WILLIAMSON, Oregon: I am in hearty sympathy with the purposes of the Mississippi River Convention. The confining of the Mississippi and the opening of the Columbia rivers are our two most needed internal improvements.

NORTON P. OTIS, New York: I am heartily in favor of such improvement of the Mississippi river levees as will give ample protection against overflow, and believe that the general government should do its full share to this end.

HENRY T. RAINEY, Illinois: I expect to be present. My district is largely interested in Mississippi river improvement, and I will be glad to co-operate with you and to do whatever I can toward accomplishing immediate results.

W. O. SMITH, Pennsylvania: I am in hearty accord with the efforts of the Mississippi River Levee Convention at New Orleans to secure from the national government adequate appropriations for needed improvements.

JAMES W. BROWN, Pennsylvania: I am in sympathy with the purpose of Interstate Mississippi River Levee Convention to secure sufficient aid from the national government to levee both banks of Mississippi river.

G. M. HITCHCOCK, Nebraska: I am not familiar with the extent and cost of work proposed to protect banks of Mississippi river, but I favor any reasonable expenditure for the protection of interests along the river.

SWAGAR SHERLEY, Kentucky: Am in hearty sympathy with purposes of your convention, and will give all aid possible to have the national government perform its plain duty in further improving Mississippi river.

LOT THOMAS, Iowa: I cannot at present endorse the proposition for a more comprehensive system of improvements of the Mississippi river by the federal government as the interests of commerce may require.

M. SHEPPARD, Texas: I assure you that I am in hearty sympathy with the movement, and I am especially desirous to see Red river, Cypress river and Sulphur river protected and deepened in this manner.

M. J. WADE, Iowa: Am in hearty sympathy with purpose of Association, and hope for action by Congress giving recognition to needs and purpose for general improvement of the Father of Waters.

JOHN A. MOON, Tennessee: I regret my inability to attend this meeting. I shall take pleasure at all times in doing anything I can to aid in the improvement of the Mississippi river and its tributaries.

S. R. DRESSER, Pennsylvania: Am in sympathy with any improvement which will help matters in general and aid commerce, and I will give the question favorable consideration when presented.

ELIAS DEEMER, Pennsylvania: Am not familiar enough with situation to commit myself, but will always support any just measure for improvements properly belonging to the government to make.

BEN. F. CALDWELL, Illinois: Allow me to say that I am most heartily in sympathy with the objects for which you are meeting. I both expect and trust that you will have a profitable session.

WM. S. GREENE, Massachusetts: Am in sympathy with purposes of Interstate Mississippi River Convention, and in favor of improvements to the Mississippi river and deepening the channel.

GEORGE W. SMITH, Illinois: While I am in hearty accord with the objects of your Association, yet I regret to say that business engagements will prevent my being with you at that time.

W. W. SKILES, Ohio: In so far as I am advised at present, I am in hearty sympathy with improvement contemplated and urged by your committee. I think the same should be made.

JOHN H. STEPHENS, Texas: I shall be glad to take this matter up with the Louisiana and Mississippi delegation here, and will take pleasure in assisting them in any way that I can.

W. A. REEDER, Kansas: Am in hearty sympathy with movement to control the waters of the lower Mississippi, but believe the true remedy is to control them near their source.

B. P. BIRDSALL, Iowa: I am in sympathy with every reasonable plan to improve the Mississippi river and to maintain it as a great artery of commerce from St. Paul to the Gulf.

S. BRUNDIGE, JR., Arkansas: I am in thorough sympathy with the Mississippi River Levee Convention, and you may depend on me to do all in my power to aid its grand work.

J. W. FORDNEY, Michigan: The government should protect the people of the



South by building and maintaining absolutely levees. River should also be kept navigable.

**E. S. CANDLER, Jr., Mississippi:** Am in hearty sympathy with objects of convention to secure ample national aid to levee Mississippi river. Sickness prevents attendance.

**JOSEPH HOWELL, Utah:** I reaffirm my sympathy with purposes of convention. Trust deliberations will be productive of beneficial results for the desired object.

**ALVIN EVANS, Pennsylvania:** In reply would say that I will give this matter careful attention and consideration when the same is brought before the House.

**HERMAN P. GOEBEL, Ohio:** Regret my inability to be present. Convey to the Association my hearty sympathy with the purposes sought to be accomplished.

**THOMAS HEDGE, Iowa:** Believe the national government should afford means needed to perfect and maintain levees on both banks of Mississippi river.

**J. G. BOWERSOCK, Kansas:** I will make an earnest endeavor to secure practicable outlet for Mississippi river waters primarily in the interest of commerce.

**THOMAS SPIGHT, Mississippi:** I regret that I cannot attend convention, but am in hearty accord with your purpose, and will render any assistance.

**HENRY MCMORAN, Michigan:** I shall be pleased to render any assistance I can for the improvement of national navigation and commerce.

**WILLIAM RICHARDSON, Alabama:** I am in hearty sympathy with the great work of your committee, and will gladly respond when called on.

**BUTLER AMES, Massachusetts:** Regret I am not sufficiently informed to express my approval or disapproval of the object of your telegram.

**L. P. PADGETT, Tennessee:** I am in hearty sympathy with the movement to speedily and effectively improve the Mississippi river.

**E. L. HAMILTON, Michigan:** Shall be glad to support any scheme of improvement recommended by River and Harbor Committee.

**R. R. HITT, Illinois:** Cannot attend convention. Am in favor of improvement of navigation of Mississippi river, and have so voted.

**CHARLES F. SCOTT, Kansas:** Shall gladly do all in my power to accomplish objects sought by proposed Levee Convention.

**A. W. GREGG, Texas:** I am in hearty sympathy with the purposes of the Interstate Mississippi River Levee Convention.

**WM. J. WYNN, California:** Not prepared to answer telegram. Would be pleased to investigate conditions and decide later.

**P. P. CAMPBELL, Kansas:** Shall favor most practical plan to prevent loss by overflow along Mississippi.

**J. S. SNOOK, Ohio:** I am in sympathy with your movement, and favor liberal appropriation for same.

**JOHN S. LITTLE, Arkansas:** I am in sympathy with efforts to improve navigation on Mississippi river.

**JOHN J. ESCH, Wisconsin:** Am heartily in favor of river improvement from St. Paul to the jetties.

**CHARLES H. WEISSE, Wisconsin:** Any reasonable improvements will have my solid support.

**H. STEENERSON, Minnesota:** Express to convention my hearty sympathy with its purposes.

**T. W. SIMS, Tennessee:** I am in hearty sympathy with the undertaking of your Association.

**W. L. JONES, Washington:** Am in hearty sympathy with general purpose of your convention.

**A. O. STANLEY, Kentucky:** Am in hearty sympathy with this great movement.

#### From Railroad Presidents and Other Representative Men.

**B. F. YOAKUM, New York, president St. Louis & San Francisco Railroad:** I thank you and citizens of New Orleans very much for your kind invitation to attend the Levee Convention, and regret exceedingly that I cannot do so. We are greatly interested in the important question you have under consideration, and trust your work will result in necessary improvement and protection of the Mississippi valley and tributary territory. Realizing the greatness of New Orleans' future, and believing it will become the second, if not the greatest port of this country, we are planning to extend our line into New Orleans at the earliest possible date and to insure adequate terminals for ourselves and lines associated with us at New Orleans. We are providing \$15,000,000, and do not hesitate to say that, looking ahead to the future, and considering the great growth of the country tributary to and which will seek an outlet through New Orleans, we believe that amount will be necessary for suitable terminals to handle our business through that port. Since the granting of our franchise by the New Orleans city council the interests of the 'Frisco and Rock Island properties have been closely merged, which means that through the privileges granted us New Orleans will gain not only 6000 miles of railroad, as originally contemplated, but the support of 15,000 miles, including the greater Rock Island-Frisco systems. President Leeds of the Rock Island and his associates are all as strong believers in the importance of New Orleans as myself, and we all appreciate the growing and future development of Louisiana and adjoining States, and will make all necessary expenditures to properly develop and take care of our interests in that territory as well as all territory east of the Rocky mountains served by the Rock Island and 'Frisco, a large proportion of which will be best served through our low-grade Mississippi river lines between St. Louis and New Orleans, the construction of which between St. Louis and Memphis is now being completed at a cost of \$30,000,000. Therefore we all feel we are making no mistake in giving an entrance to your city.

**GEORGE J. GOULD, New York, president of the Missouri Pacific Railway, etc.:** I regard your convention to be held in New Orleans on the 27th as a very important event for the entire Mississippi valley and all the great and diversified interests therein, and I hope the views and plans for levee protection that will be formulated will be so desirable to all interests, including those of your great city, that they will commend themselves to the public at large and to the Congress of the United States, where it is hoped liberal appropriations will be provided. The railroad interests I am connected with have under way and partially completed a low-grade line of road from East St. Louis to New Orleans, crossing the Mississippi river on a great bridge at Thebes, Ill. When this line is completed it will be a water-grade line paralleling the Mississippi and opening up virgin forests upon its west bank, and in addition it will make accessible great areas of farming lands susceptible of a high degree of cul-

tivation if safe from inundation. We are also, at great expense, rebuilding the railroad between Little Rock, Ark., and Coffeyville, Mo., and are constructing a new low-grade line of railroad in the White river valley to connect our Kansas City lines with the main line of the Iron Mountain road. All of this, with necessary expenditures for equipment and other railroad appurtenances, will amount to from \$40,000,000 to \$50,000,000, and the work has been under way for two or three years, with the belief on our part that this great investment, the bulk of which will be in the Mississippi valley, will be protected from damage by floods and inundation. The completion of our plans hereinabove outlined will inure greatly to the benefit of the city of New Orleans and largely add to her maritime trade.

**J. A. OCHERSON, St. Louis, Mo.:** I have the honor to acknowledge receipt of your cordial invitation to address the Levee Convention which will gather at New Orleans October 27. It is with the greatest possible regret that I am compelled to forego the pleasure of being with you. The subject to be discussed is one to which I have devoted a great deal of study, and long familiarity with the physical conditions to be contended with in the reclamation of the great fertile valley by the control of the floods leaves no room for doubt in my mind that it is entirely feasible, and that the benefits to be secured from such control will justify the expenditure of even much greater sums of money than have yet been contemplated. Millions of dollars are to be expended, and very properly, too, by our own government to reclaim the arid lands of the West. Holland, whose entire area is less than half of our great alluvial valley, has undertaken the project of reclaiming a vast sea, covered with water several feet in depth—a project involving the expenditure of four times the amount estimated for the completion of our entire levee system, while serving to reclaim an area much smaller even than the St. Francis basin. In many other parts of the world are being constructed at a great cost works having for their object the increase in acreage of tillable land. Why, then, should there be any hesitation in providing the most ample means for the purpose of effectually reclaiming this great valley, the fertility of whose soil cannot be excelled by any equal area of the earth's surface?

**GEORGE B. CORTELYOU, Washington, D. C., Secretary of the United States Department of Commerce and Labor:** I am in receipt of your letter of the 14th inst., with enclosures, in which, on behalf of the Interstate Levee Association and of your committee, you extend to me an invitation to attend and address the convention which meets in New Orleans on the 27th inst. The questions to be considered by this convention are of such importance that I shall watch its proceedings with the greatest interest, and it is a matter of much regret to me that I shall not be able to attend. An invitation was received some time ago from Mr. Parker of your committee, and I enclose a copy of my letter explaining why I could not accept. Aside from the routine work here, which of itself has been most exacting, the many matters connected with the proper organization of the new Department have demanded so much attention that I have found it impossible to accept any of the number of invitations which, like yours, have appealed to me strongly.

**SAMUEL SPENCER, New York, president of the Southern Railway:** I regret exceedingly, by reason of important engagements previously entered into, my inability to attend the Levee Convention which will convene in your city on the 27th inst. I am in sympathy with the general purposes of the convention, and trust it will be able to adopt effective measures looking to appropriate legislation towards protecting the lands bordering on the Mississippi river against the overflow and encroachments of that river.

**WILLIAM EDENBORN, New York, president Louisiana Railway & Navigation Co.:** Regret exceedingly inability to attend Levee Convention. Your object to control rivers in time of flood deserves full support of city, State and nation. The immense and varied progress in upbuilding the lower valleys is dependent largely on products of the soil—therefore the necessity to control the water. Number me with the enthusiastic supporters.

#### From Business Organizations.

**GEORGE F. STONE, secretary Board of Trade of Chicago:** Your courteous invitation extended to the Board of Trade of the city of Chicago to be represented at the forthcoming Levee Convention in your city was duly received and referred to the Board's executive committee, and I am directed to say that, while the Board is mindful of and greatly interested in and has always recognized the importance of improving the Mississippi river and its outlets, and also the important relations which the navigation of that river sustains to the great agricultural interests of the country, and consequently directly and indirectly to all its industries, it is the judgment of the Board that its views thus briefly expressed can be at least as effectively and directly promoted through the offices of the National Board of Trade, which convenes each year in the city of Washington. This Board has advocated in previous annual meetings of the National Board of Trade the improvement of the Mississippi river, and has always worked cordially with New Orleans and the representatives of that city in this direction. At the next annual meeting of the National Board of Trade the delegates appointed by this Board to attend that meeting will bestow upon the subject that attention which its intrinsic character demands and which will be in harmony with the previous action of the Board with reference to the objects sought for by the Levee Convention. Again, the executive committee of the Board reports that our representatives and senators in Congress from the State of Illinois are fully alive to the importance of the objects sought for by the convention and will render effective service to such legislation, and the president finds that it is exceedingly difficult to induce those members of our Board best qualified to act upon such questions to attend the convention, as they are exceedingly busy at this active season of the year and cannot conveniently leave their business at this time. Therefore it is deemed unadvisable to send a special delegation to the convention in response to your courteous invitation.

**A. A. BURNHAM, secretary National Business League, Chicago:** In reply to your cordial invitation to this league to send a delegation to the Levee Convention at New Orleans on the 27th inst., I am requested by President Phelps to state there are two events in the near future that will make it doubtful if we can send a delegation at the time mentioned. A large banquet to be given by the Commercial Club of Chicago in honor of ex-President Cleveland, for which preparations are now in progress, is set for October 14. Many of our prominent business men have engagements in St. Louis on the 25th inst. However, if matters turn favorable, we may be able to send representatives, in which case you will be duly notified. We are deeply interested in the

levee proposition; are also well aware of its importance to Chicago and the West when the two oceans are united, and wish you every success in your deliberations and ultimate results.

J. B. HASSETT, secretary Board of Trade, Saratoga, Wyo.: We concede in full the claims set forth in your letter, that the interests involved are of national importance. In this great country of ours, aided by the century's conveniences, the product of American genius, the Union has evolved and perfected a community of interests so closely interwoven that the success of commercial and all legitimate enterprises tending to promote the safety and prosperity of any community is an issue anxiously looked for, sincerely hoped for and devoutly prayed for by every American citizen sheltered by the flag. While, owing to short notice, our delegates may not find it convenient to be with you in person, yet we can assure you that we are heartily with you in true Western spirit, and hope that the results may be of character equal to meeting in full every requirement necessary to the success of the end in view.

EDWIN C. GIBBS, president Business Men's Club, Cincinnati, Ohio: I have the honor to acknowledge your communication of August 1 with reference to the convention to be held in New Orleans October 27. Your letter was read by the secretary at a meeting of the Club held October 6, at which meeting the following motion prevailed: "Moved by Mr. Puchta, duly seconded, that the communication from Mr. J. N. Luce, chairman of Convention Interstate Mississippi River Improvement and Levee Association, be acknowledged, with the statement that the Business Men's Club of Cincinnati, Ohio, is in hearty sympathy with the improvements and with the sentiments expressed in the communication."

WM. H. LOVE, secretary Board of Trade, Baltimore: We feel as you do in regard

to the improvement of the Mississippi, that it has become a national matter. The great river, draining, as it does, twenty States, and running through the heart of what is possibly one of the most fertile regions of the earth's surface, demands that ample protection should be afforded to all the business interests of that section from the ever-recurring floods of the mighty Father of Waters. In your efforts to mitigate the evils of inundation by applying all the remedies known to modern engineering skill, you have the earnest sympathy of this Board of Trade.

G. D. ROGERS, Chamber of Commerce, Minneapolis, Minn.: The following resolution was yesterday unanimously adopted by the board of directors of this association: "Resolved, That the Chamber of Commerce of Minneapolis is in full sympathy with and endorses the purpose and efforts of the Interstate Mississippi River Improvement and Levee Association to secure from the national government appropriations sufficient to improve the navigation of the Mississippi river, and to construct and maintain the levee line along its banks from Cairo to the passes."

LON BRYSON, president Upper Mississippi River Association, Davenport, Iowa: We send you greeting, and hope you will have a good attendance and a profitable meeting. I received an appointment from the governor as a delegate, but it is impossible for me to leave at this time. I assure you that I am heartily in sympathy with all movements that are for the improvements of our principal waterways and the preservation and protection of the alluvial lands bordering on them.

P. BYRNES, president Bessemer Board of Trade, Pueblo, Col.: I beg to say that the Bessemer Board of Trade has decided to send no delegate, but expresses best wishes for success of convention.

### George J. Gould's Interest in the Mississippi Valley.

195 Broadway, New York, October 23, 1903.

J. N. Luce, Chairman New Orleans Levee Executive Committee,  
New Orleans, La.:

I regard your convention to be held in New Orleans on the 27th as a very important event for the entire Mississippi valley and all the great and diversified interests therein, and I hope the views and plans for levee protection that will be formulated will be so desirable to all interests, including those of your great city, that they will commend themselves to the public at large and to the Congress of the United States, where it is hoped liberal appropriations will be provided. The railroad interests I am connected with have under way and partially completed a low-grade line of road from East St. Louis to New Orleans, crossing the Mississippi river on a great bridge at Thebes, Ill. When this line is completed it will be a water-grade line paralleling the Mississippi and opening up virgin forests upon its west bank, and in addition it will make accessible great areas of farming lands susceptible of a high degree of cultivation if safe from inundation. We are also, at great expense, rebuilding the railroad between Little Rock, Ark., and Coffeyville, Mo., and are constructing a new low-grade line of railroad in the White river valley to connect our Kansas City lines with the main line of the Iron Mountain road. All of this, with necessary expenditures for equipment and other railroad appurtenances, will amount to from \$40,000,000 to \$50,000,000, and the work has been under way for two or three years, with the belief on our part that this great investment, the bulk of which will be in the Mississippi valley, will be protected from damage by floods and inundation. The completion of our plans hereinabove outlined will inure greatly to the benefit of the city of New Orleans and largely add to her maritime trade.

GEORGE J. GOULD.

### The 'Frisco and Mississippi Improvements.

New York, October 26, 1903.

J. N. Luce, Chairman New Orleans Levee Executive Committee,  
New Orleans, La.:

I thank you and citizens of New Orleans very much for your kind invitation to attend the Levee Convention, and regret exceedingly that I cannot do so. We are greatly interested in the important question you have under consideration and trust your work will result in necessary improvement and protection of the Mississippi valley and tributary territory. Realizing the greatness of New Orleans' future, and believing it will become the second, if not the greatest port of this country, we are planning to extend our line into New Orleans at the earliest possible date, and to insure adequate terminals for ourselves and lines associated with us at New Orleans, we are providing \$15,000,000, and do not hesitate to say that, looking ahead to the future and considering the great growth of the country tributary to and which will seek an outlet through New Orleans, we believe that amount will be necessary for suitable terminals to handle our business through that port. Since the granting of our franchise by the New Orleans city council the interests of the 'Frisco and Rock Island properties have been closely merged, which means that through the privileges granted us New Orleans will gain not only 6000 miles of railroad as originally contemplated, but the support of 15,000 miles, including the greater Rock Island-'Frisco systems. President Leeds of the Rock Island and his associates are all as strong believers in the importance of New Orleans as myself, and we all appreciate the growing and future development of Louisiana and adjoining States, and will make all necessary expenditures to properly develop and take care of our interests in that territory, as well as all territory east of the Rocky mountains served by the Rock Island and 'Frisco, a large proportion of which will be best served through our low-grade Mississippi river lines between St. Louis and New Orleans, the construction of which between St. Louis and Memphis is now being completed at a cost of \$30,000,000. Therefore we all feel we are making no mistake in giving an entrance to your city.

B. F. YOAKUM.

I. B. NEWCOMBE

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### Condensed Report to Comptroller

## The First National Bank Of Birmingham, Ala.

NOVEMBER 17th, 1903

#### RESOURCES

Loans and Discounts .....\$3,556,974.79  
Overdrafts ..... 185.92  
U. S. Bonds and Premiums.. 367,000.00  
Other Stocks and Bonds.... 59,300.00  
Bank Building..... 51,000.00

#### LIABILITIES

Capital Stock .....\$ 300,000.00  
Surplus and Profits..... 378,265.37  
Reserved for Taxes..... 3,878.45  
Circulation ..... 300,000.00

#### CASH

In Vault.....\$ 402,008.42  
With Banks..... 1,459,691.80  
With U. S. Treas. 18,054.40  
—————\$1,869,754.62  
\$6,004,225.33

#### DEPOSITS

Individual.....\$4,296,903.04  
Bank..... 675,178.47  
United States.... 50,000.00  
—————\$5,022,081.51  
\$6,004,225.33

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J. H. WOODWARD, Vice-President.

W. W. CRAWFORD, Cashier.

J. H. BARR, Vice-President.

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B. F. MOORE, Secretary and Treasurer Moore & Handley Hardware Co.

E. M. TUTWILER, President Tutwiler Coal, Coke & Iron Co.

W. S. BROWN, Merchant.

J. H. WOODWARD, President Woodward Iron Co.

WM. A. WALKER, Attorney-at-Law.

F. D. NABERS, Wholesale Drugs.

T. H. MOLTON, Real Estate and Insurance.

ROBERT JEMISON, President Birmingham Railway, Light and Power Co.

ERIKINE RAMSAY, of Ramsay & McCormack, Bankers.

W. H. HASSINGER, Vice-President Republic Iron and Steel Co.

WALKER PERCY, Attorney-at-Law.

F. M. JACKSON, President Blocton-Cahaba Coal Co.

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